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**MEN AND WOMEN IN SHIPS: ATTITUDES OF
CREWS AFTER ONE TO TWO YEARS OF INTEGRATION**

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**MEN AND WOMEN IN SHIPS: ATTITUDES OF CREWS
AFTER ONE TO TWO YEARS OF INTEGRATION**

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➤ Factor scores were generated for the 3,276 men and 418 women responding to the postintegration survey. ANOVAs were performed to investigate the effect of the independent variables: deployment, fleet, ship, department, pay grade, workshop attendance, gender, age, education, marital status, tenure, and reenlistment intent.

The results indicate that the assigned fleet, ship, and department exerted a strong effect on attitudes but deployment did not. Chief petty officers had a positive opinion of the impact of women on the ship and its crew; nonrated men were enthusiastic about mixed-gender crewing; petty officers felt women had led to a decline in discipline and leadership and preferred an all-male crew. The effects of age, education, marital status, and tenure upon the factor scores were weak, but reenlistment intent had a significant effect. Sexual harassment was predominantly verbal in nature and being handled by the women themselves. Those who had attended a well presented preparatory workshop expressed positive attitudes; those attending a poor workshop were more negative than those who had not participated at all. From crew member or participant/observer reports, it was concluded that (1) women perform at least as well as do men aboard ships except in certain physically demanding jobs, and (2) they have been well integrated into the crews.

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FOREWORD

The research described in this report was conducted within exploratory development work unit R63.521.084.021.03.03 (Personnel Assimilation and Supervision) and advanced development project Z1326-PN (Integrated Crews), under the sponsorship of the Chief of Naval Personnel.

This report is the fifth and last in a series on the attitudes of personnel before and after the integration of women into the crew of the ship. The first four reports described responses to the preintegration form of the "Navy in Transition" questionnaire, administered aboard six ships between February 1979 and July 1980 (NPRDC TN 81-13, SR 83-1, SR 83-2, and TR 82-57). This report describes responses to the postintegration form of the questionnaire, administered aboard eight ships between February 1980 and August 1981.

The cooperation of the commanding officers and crews of the eight ships in which this research was conducted is gratefully acknowledged.

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Captain, U.S. Navy
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SUMMARY

Problem and Background

The decision to assign women to noncombatant ships shattered naval tradition but was implemented to improve manning levels in the fleet. A measured plan to integrate a few ships each year was developed and a system of monitoring personnel rates instituted. At the same time, it was recognized that the integration process should be investigated so that insights gained could be applied to ships scheduled for women at a later date. In this investigation, pre- and postintegration surveys were developed and administered, naval reservists served as participant/observers, and key personnel were interviewed. Eight of the first ten ships to receive women participated. Responses to the preintegration survey, which was administered aboard six ships between February 1979 and July 1980, have been previously reported.

Purpose

The overall purpose of this research is to provide Navy management with an appraisal of how integration is proceeding. The purpose of the current effort was to analyze responses to the postintegration survey and document the behaviors noted by the participant/observers.

Approach

The postintegration survey was factor analyzed and factor scores were generated for each respondent. These scores were subjected to several analyses of variance to investigate the effect of the independent variables: deployment, fleet, ship, department, pay grade, workshop attendance, gender, age, education, marital status, tenure, and reenlistment intent. The observational reports were organized into categories paralleling the factors and summaries were developed.

Findings

1. The fleet to which personnel were assigned had a significant effect on all the factor scores, but deployment did not. Attitudes in Pacific Fleet ships were consistently more positive than were those in Atlantic Fleet ships.
2. Strong ship and department effects were evident. Personnel on ship #6 and in the aviation department, both of whom had expressed negative attitudes prior to integration, remained negative.
3. Chief petty officers positively assessed the impact of women on the ship and its crew. Nonrated men were very enthusiastic about being in a mixed gender crew. By contrast, petty officers felt that women were responsible for a decline in discipline, leadership, and supervision; they preferred an all-male crew.
4. Many men felt women received preferential treatment, particularly in assignments to physically demanding jobs and in disciplinary matters.
5. The effects of age, education, marital status, and tenure upon the factor scores were weak. Reenlistment intent had a significant effect. Those who were undecided about remaining in the Navy endorsed women in ships; those who were reenlisting were neutral.

6. Personnel who had attended a preparatory workshop that was well presented were consistently positive in their survey responses; those who had attended a poorly presented workshop were more negative than were those who had not attended a workshop.

7. Sexual harassment was predominately verbal in nature and seldom reported. Women who reported harassment felt that the incidents that occurred were not serious or that they could be handled directly.

8. The participant/observers reported that gender integration aboard ships was more complete than on shore stations and that women were performing at least as well as men in all jobs except those beyond their physical abilities.

Recommendations

1. Until selection criteria based on valid measures of physical abilities are developed for use in assigning nonrated women to sea duty, consideration should be given to instituting a minimum height/weight standard to increase the probability that the majority of women can perform general detail duties.

2. The Women at Sea workshops, as delivered by human resources management (HRM) personnel at Norfolk and San Diego, should be evaluated by the Naval Military Personnel Command (NMPC-6) to determine how their content and participant acceptance differ. As a result of this evaluation, a single workshop should be developed for use by all HRM centers/detachments.

3. The basis of the consistently less positive attitudes of petty officers and personnel in the aviation department should be determined. This task could be undertaken by trained consultants at the HRM centers or by means of a follow-on research effort assigned to NAVPERSRANDCEN.

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INTRODUCTION

Problem and Background

When legislation was enacted in 1948 to permit women to become members of the Regular Navy, it was the intent of the Congress that they not be permitted to serve in the combatant units of the Navy--ships at sea. Title 10, U.S.C., Section 6015 specifically limited the possible shipboard assignment of women to duty in transports and hospital ships. For the most part, such ships are not part of the active fleet, although nurses have served on them during wartime. In 1973, RADM Elmo Zumwalt, Chief of Naval Operations, transferred the hospital ship USS SANCTUARY to the active fleet for the purpose of evaluating the capabilities of women aboard ship. Although the commanding officer's (CO's) report of the performance of the approximately 120 females who served in the crew was positive, the experiment was shortlived (Thomas, 1981).

Throughout the 1970s, attempts were made to repeal Section 6015. In September 1978, partial success was achieved when Public Law 95-485 was enacted, modifying the language to read as follows:

Women may not be assigned to duty in vessels or aircraft that are engaged in combat missions nor may they be assigned to other than temporary duty on vessels of the Navy except for hospital ships, transports, and vessels of a similar classification not expected to be assigned combat missions.

This modification permits women to be assigned on a temporary basis (not to exceed 6 months) to a wide range of ship types and on a permanent basis to major auxiliaries (destroyer tenders, submarine tenders, repair ships), minor auxiliaries (salvage ships, fleet ocean tugs, submarine rescue ships), research vessels (guided missile test ships, deep submergence support ships), oceanographic units, and training aircraft carriers. As a result of this modification, Navy management embarked upon a planned program of change. Despite precedences in vessels of the Merchant Marines, U.S. Coast Guard, and the National Oceanic and Atmospheric Administration, never before had plans been made to assign so many women to ships' crews. Moreover, no other nation has ever included military women in the at-sea components of their naval forces. Thus, the move toward gender integration in specific ships shattered tradition and quickly became the focus of public interest. For these reasons, the inevitable problems associated with introducing and utilizing women in a totally androcentric environment were compounded by resistance to change and the glaring light of publicity.

The plan for integrating the crews of Navy ships called for enlisted women to join the crews of 10 ships during the first 2 years, with a goal of 5,000 women on sea duty by the end of 1985.¹ Accordingly, in November and December of 1978, 66 women reported to USS VULCAN (AR-5) in Norfolk, Virginia, becoming the first group of women to be assigned to sea duty after enactment of the legislation. By the end of the fiscal year, 357 enlisted women were serving aboard 5 ships and 53 officers had been assigned to 19 ships. They were joined in fiscal year 1980 by 404 additional women assigned to a total of 28 ships.

¹Structured Plan to Facilitate Implementation of Amendment of Section 6015, Title 10, U.S.C., 1977.

The first ship to be integrated on the west coast requested that a workshop be given to the men in the crew to prepare them for the change. The human resource management (HRM) team, which was responsible for developing and delivering that unique workshop, turned to the researchers at the Navy Personnel Research and Development Center (NAVPERSRANDCEN) for assistance. Survey items were written in an effort to identify the interpersonal issues and sexual stereotypes that should be addressed in the workshop. These items were included in a "Navy in Transition" questionnaire and administered to over 800 men while the ship was enroute from the Western Pacific to San Diego and responses analyzed to highlight areas of concern.

Since the ships to be integrated during the following years were undergoing modification for female crew members, it was deemed necessary to evaluate the integration process aboard the initial ships to avoid repeating errors and to capitalize upon success. Accordingly, NAVPERSRANDCEN was directed to appraise the process of integrating women into the shipboard environment.² To gain insight into the processes occurring during the initial stages of integration, the principal investigator visited the two ships that already had women in the crews. Based on observation, discussions with Navy women aboard the ships, and interviews with the COs, two revised versions of the "Navy in Transition" pilot survey were developed--a preintegration version, to be administered before the ships were integrated, and a postintegration version, to be administered 9 to 12 months after women had reported aboard ship.

Contact was made with appropriate offices to make arrangements to administer the preintegration survey to the crews of the eight ships scheduled to receive women in the 1979-1980 time period. However, since permission to include two Atlantic Fleet submarine tenders in the project was denied, the survey was administered to personnel serving on or being assigned to six Navy ships. The final sample consisted of 1,936 men serving aboard five Navy ships,³ 438 men serving aboard a control ship, and 346 women being assigned to six ships. The questionnaire given to women and men measured traditionality, acceptance of women, anticipation of discrimination, and gender interaction. The form given to men contained additional items to probe the anticipated impact upon the ship and its personnel resulting from adding women to the crew; the form given to women contained additional items to address potential problem areas. The responses to the preintegration surveys were analyzed extensively (Greebler, 1981a, 1981b; Greebler, Thomas, & Kuczynski, 1982). The major findings are summarized below:

1. Men in departments having parallels ashore where Navy women have traditionally worked (supply, medical/dental, and administration) expressed the most favorable attitudes toward having women as crew members. Men in the aviation, weapons and engineering departments, where work is physically strenuous and experience with female co-workers more rare, expressed the most opposition.
2. Attitudes differed significantly among the various pay grades. Nonrated men were greatly concerned with women receiving preferential treatment, particularly in

²Chief of Naval Operations (OP-10) Memorandum for the Principal Deputy Assistant Secretary of the Navy (Manpower and Reserve Affairs) of 11 April 1979.

³Data for men assigned to one ship were eliminated from analysis, since an adequate or representative sample had not been obtained.

assignment to jobs and in disciplinary matters. Yet, more than any other group, they favored a mixed-gender crew. The chief petty officers (CPOs) and commissioned officers expected that the addition of women would have a minimal impact on the ship and crew and anticipated both genders would be treated equitably. They did not look forward to changing the exclusively male environment, however.

3. The attitudes of the men differed significantly by ship, whereas the attitudes of the women being assigned to the six ships were very similar.

4. Nonrated women and those who had volunteered for sea duty were optimistic, anticipating that the adjustment to shipboard life would not present serious problems. Their main concerns were profanity, having to prove themselves, and countering the resentment of men. Women petty officers generally were more pessimistic, doubting their acceptance by men and whether they would receive equitable treatment.

Purpose

The purpose of the current effort, which completes the exploratory research on the gender integration of Navy ships, was to analyze responses to the postintegration survey and data gathered by the participant/observers, relating results to preintegration attitudes when possible. Such information will be used to modify or develop programs or policies designed to ease the integration in the future.

PROCEDURE

Methodology

The goal of the research design was to provide insight into the changes occurring as naval ships transitioned from all-male to mixed gender crews. Parlett and Hamilton (1976) state that, when studying an innovation, the conventional experimental approach should be abandoned in favor of an "illuminative evaluation." They argue that the traditional paradigm, which focuses on fully objective methods, has "led to studies that are artificial and restricted in scope... inadequate for elucidating the complex problem areas they confront and, as a result, provide little effective input to the decision-making process" (p. 141). By contrast, illuminative research does not try to measure and predict but, rather, to describe and interpret. In the words of the authors, it attempts "to discern and discuss the innovation's most significant features, recurring concomitants, and critical processes" (p. 144). They suggest that a triangulation approach of combining techniques or methods be used to shed light on the issues. Such a multimethod approach permits cross-checking of subjective data and allows the researcher to interpret consistent findings with some certitude.

When conducting action research, theory often follows practice (Cherns, 1969). Typically, a planned change is introduced, its evolution is documented, and conclusions are drawn. If patterns of cause and effect can be discerned, the findings may be generalizable to other organizations or settings. Since no hypotheses have been tested, however, the results may make a minimal contribution to the body of scientific knowledge. To some investigators, this shortcoming represents a critical weakness of this type of research; to those responsible for making informed decisions about the innovation, it is immaterial whether the interests of science are advanced. The needs of this latter group are not met, however, if the researcher fails to exhibit professional integrity in collecting, analyzing, and interpreting the data.

The approach used in this investigation incorporates the philosophies of illuminative and action research. Data were collected through written surveys, interviews, and participant/observers. The surveys provide quantifiable information on a wide range of relevant issues and permit comparisons among ships and personnel having certain characteristics. In addition, by administering them at two time periods, preintegration attitudes can be linked to postintegration perceptions and conditions. The more subjective information, gathered from interviews and observation, contributes a real-world quality to the response percentages obtained from the surveys. Moreover, through triangulation, greater insight can be achieved into the roots or concomitants of problems.

Sample

The sample consisted of the crews of eight noncombatant ships, which are identified by number in this report. Since ships #1 through 6 participated in both phases of the study, both pre- and postintegration data are available for them. However, since ships #7 and 8 were integrated before the project began, only postintegration data are available for them. The ship types involved were a destroyer tender, two submarine tenders, two repair ships, an aircraft carrier training ship, and two special auxiliary ships. Ships #1 through 5 are in the Pacific Fleet; and ships #6 through 8, in the Atlantic Fleet. All have complements of over 1,000 personnel, except for the two auxiliary ships, which are crewed by less than 400 personnel. The percentage of women varies among ships, ranging from 8 to 24 percent. Exact figures are of little value due to the fluctuation in number of personnel.

Data Collection

The three methods of data collection used are described below.

Participant/Observers

Teams of Navy reservists served as participant/observers aboard six of the eight ships. Ideally each team consisted of at least one male and one female petty officer, a CPO of either gender, and a commissioned officer of either gender so that berthing and messing areas observed would differ, as well as the environments to which the team members would have access.

Reservists with a special background--those with civilian jobs in counseling, teaching, personnel work, or journalism, or military experience in human resources management, health care, or personnel--were requested for the assignment, so that the time to train and orient them could be minimized. Prior to reporting for active duty, the reservists were sent materials that explained the project, described methods of objective observation, and contained exercises to be undertaken prior to training.

During a 1-day training session, conducted by a member of the research staff, the reservists were instructed on the kind of behavior to be recorded, the way to code observations on the forms developed specifically for this project (see Appendix A), and their role aboard ship. In addition, the reservists practiced observing and recording behavior in a unique situation. At the end of the training, they reported aboard the ship for 10 days of active duty, working in their military specialty. Only the ship's CO and executive officer (XO) were informed of their role as observers. Immediately after the

10-day period, a debriefing session was held, where each person answered a series of written questions independently and participated in a tape-recorded group discussion, lasting from 6 to 8 hours.

So that all information was readily accessible for analysis, the completed observation forms were typed onto side-notched cards and coded by rank of observer, location where incident occurred, type of behavior observed, etc.

Postintegration Survey

Men's and women's versions of the postintegration form of the Navy in Transition survey (NTS) were developed specifically for this study. Items given to both genders addressed:

1. Problems encountered aboard ship.
2. Treatment of women (favoritism/discrimination).
3. Attitudes toward sea duty.
4. Effects of male-female interactions (work and social).
5. Assessment of preparatory workshops.
6. Deployment experiences and problems.
7. Demographic data.

In addition, the men's form included items focusing on (1) perceived impact of integration on the ship and crew, (2) attitudes toward the role of women (traditional orientation),^{*} and (3) acceptance and assimilation of women. The women's form included additional items about adjustment to shipboard life and sexual harassment.

The survey was administered to the crews of all eight ships between February 1980 and August 1981. The post survey was intended to be administered within 1 year after integration. However, as shown below, this period varied greatly among ships, due to uncontrollable factors.

Ship	Survey Time (Months After Integration)
1, 3, 4	9
2	20
5	12
6	17
7	31
8	29

A research team member administered the survey on four of the ships; and military personnel attached to NAVPERSRANDCEN, on the other four. Men and women were surveyed together in large groups congregated in the mess area. The survey

^{*}Items measuring traditionality were selected by performing a regression analysis on the 15 "attitude toward women" items presented in the preintegration form of the NTS. Six items contributed significantly to the equation, accounting for 77 percent of the variance, and were included in the post survey.

administrator described the survey's purpose and confidentiality and gave instructions. Four ships--#4, 5, 7, and 8--were surveyed during or after a deployment, and two--#1 and 3--prior to deployment. Although ships #2 and 6 have sea tours for a period of several days or weeks, they never actually deploy.

A total of 3,276 men and 418 women responded to the postintegration form of the NTS. Table 1, which presents their pay-grade distributions by ship, shows that the majority of women were nonrated while the majority of men were petty officers. Although five women CPOs responded to the survey, they were omitted from the sample to protect their confidentiality. The distributions of pay grades by ship are significantly different for both men and women.

Interviews

At every opportunity, research team members interviewed personnel in the ships' crews. Frequently, while administering the survey, they held informal discussions with people at all levels. Whenever possible, discussions were scheduled with the CO, XO, Women in the Navy coordinator, and career counselor.

Data Analysis

All data were analyzed using a Statistical Package for the Social Sciences (SPSS) computer program, version 8 (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975).

Factor Analysis

Three principal factor analyses with iterations (PA2) were performed to reduce the large number of items into meaningful sets. The first factor analysis included all attitudinal items given to both men and women; the second, items given to men only; and the third, items given to women only. Results are presented in Table 2 and described below.

Analysis Including Items Given to Both Men and Women. The initial factor solution extracted 10 factors with eigenvalues greater than one. However, since a Scree test indicated a four or five-factor solution would be optimal, items with extremely low communalities were removed and analyses extracting three, four-, five-, and six-factor solutions were examined. The four-factor, varimax-rotated solution was chosen, as it allowed for the clearest interpretation and had the lowest item complexities. Composite factor scores were calculated for each respondent using the computer-generated factor coefficients for item weighting and a cut-off point of .35. The four factors, accounting for 36 percent of the total variance, are described below:

1. Problems. The items in this factor, while administered to both genders, address problems likely to be encountered by women on their first tour of sea duty (i.e., having to prove oneself, safety in pier area). Respondents replied to these items using a 4-point-scale, with the following alternatives: "major problem," "minor problem," "only a problem at first," and "not a problem." This factor accounts for 54 percent of the common variance.

2. Treatment. The items in this factor assess equality of treatment of men and women aboard the integrated ships. The alternatives for the 5-point scale used to respond to these items range from favoritism toward women to discrimination against women. This factor accounts for 25 percent of the common variance.

Table 1
Description of Survey Respondents

Ship	E-1--E-3				E-4--E-5				E-7--E-9				Officers				Total ^{b, c}			
	Men		Women		Men		Women		Men		Women		Men		Women		Men		Women	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1	154	28	20	38	351	65	30	56	35	6	--	--	3	1	3	6	543	18	53	13
2	74	36	38	62	103	51	17	28	15	7	--	--	12	6	6	10	204	7	61	16
3	148	27	23	60	326	60	12	32	51	9	--	--	17	3	3	8	542	17	38	10
4	42	46	25	61	42	46	12	29	4	4	--	--	3	3	4	10	91	3	41	10
5	162	40	26	63	209	52	12	29	28	7	--	--	4	1	3	7	403	13	41	10
6	226	42	36	63	275	51	18	32	22	4	--	--	16	3	3	5	539	17	57	15
7	78	31	16	41	146	59	19	49	19	8	--	--	6	2	4	10	249	8	39	10
8	164	32	22	36	307	60	36	58	24	5	--	--	17	3	4	6	512	17	62	16
Total	1048	34	206	52	1759	57	156	40	198	6	--	--	78	3	30	8	3083	100	392	100

Notes.

1. Significance: Men-- $\chi^2(3,7) = 88.19, p. < .001$; women-- $\chi^2(2,7) = 28.50, p. < .012$.
2. Percentages do not always total 100 due to rounding.

^aWomen E-7 --E-9s not included due to the small N.

^bTotal Ns do not include the entire sample because 193 men and 26 women did not report their pay grade.

c Percentages in this column are of the total sample.

Table 2
Results of Factor Analyses

Factor	Component Items	Factor ^a loading
Analysis Including Items Given to Both Men and Women		
Problems	Are you having problems in any of the following areas?	
	Having to prove myself to people at my level or below	.58
	Having to prove myself to superiors	.56
	Safety on board ship	.54
	Access to chain of command	.52
	Not enough training or direction from supervisors	.50
	Safety on base and/or pier area	.49
	Performing assigned tasks	.48
	Taking orders from a male superior	.48
	Working with male crew members	.48
	Tasks requiring physical strength	.41
	Boredom	.40
	Use of profanity by others	.40
	Feeling comfortable about going to sick call	.39
	Crowded quarters and lack of privacy	.36
Treatment	How do you feel the women aboard your ship have been treated in the following areas?	
	Special privileges such as granting leave and liberty	.70
	Performance marks	.67
	Discipline	.66
	Discharges and reassignments	.59
	Job assignments not involving physical strength	.56
	Policies on uniforms and general personal appearance	.56
	Job assignments where physical strength is involved	.48
Working together	Are you having any problems working with female crew members?	.58
	The men and women in the crew work well together.	-.58
	Are you having any problems with women's behavior toward men?	.46
	Are you having any problems with men's behavior toward women?	.44
	Female petty officers are able to handle the problems of nonrated males.	-.44
	Are you having problems with resentment from opposite sex crew members?	.40
	I find working with the opposite sex to be distracting.	.38
	Are you having problems taking orders from a female supervisor?	.37
Affect	How do you feel about . . .	
	Most of your male supervisors?	.62
	Most of your female supervisors?	.58
	Most of the women you work with?	.51
	Most of the men you work with?	.50
Analysis Including Items Given Only to Men		
Impact	In your opinion, what effect has the addition of women to the ship had on the following areas?	
	Quality of work	.74
	Amount of work accomplished	.72
	Team efforts	.72
	Leadership and supervision	.69
	Efficiency of running the ship	.64
	Discipline	.58
	Cleanliness and appearance of ship	.52
	Pride in being in the Navy	.48
	Morale of crew	.47
	Appearance of crew	.45
	Most of the problems that existed when women first came aboard have disappeared with time.	.39

^aFactors loading under .30 not included.

Table 2 (Continued)

Factor	Component Items	Factor ^a loading
Analysis Including Items Given Only to Men (Continued)		
Traditionality	Women are basically nonaggressive and, therefore, will never be good in active combat.	-.72
	All occupational fields in the aviation branch (in both support and combat roles) should be open to women.	.61
	Women should not be put on combatant ships.	-.58
	Given equal training and experience, women would be as good supervisors as men.	.54
	Women should take a supportive role in society, marriage, and the work world rather than trying to be leaders and competing with men.	-.50
	Women should be allowed to work at any job they are capable of performing, no matter how nontraditional it is.	.46
Endorsement	Are you now in favor of women being on your ship?	.74
	Life on board ship is more enjoyable, now that women are here.	.63
	Were you in favor of women being assigned to your ship before they or you came aboard?	.63
	What effect has the addition of women to the ship had on the morale of the crew?	.48
	How do you feel when negative comments are made about women aboard your ship?	.38
	Most of the problems that existed when women first came aboard have disappeared with time.	.36
Analysis Including Items Given Only to Women		
Adjustment	Assignment to sea duty has made me feel..positive about being in the Navy..neither positive nor negative..negative about being in the Navy.	.84
	How do your first feelings or expectations about being assigned sea duty compare with your present feelings?	.74
	Most of the problems that existed when women first came aboard have disappeared with time.	.44
	I plan to get pregnant prior to the end of my present enlistment.	-.44
	Women on this ship help new female crew members adjust.	.36
Workshop	Were there any definite leaders who emerged within your workshop group?	.82
	If leaders emerged, did they remain leaders aboard ship?	.81
	Did your workshop group stay as a group once aboard ship?	.38
	Did you have contact with your ship prior to actually coming aboard?	.38

^aFactors loading under .30 not included.

3. Working Together. Items in this factor measure interactions among the crew primarily in a work environment (i.e., men and women working together, behavior toward opposite sex). This factor accounts for 12 percent of the common variance.

4. Affect. Items in this factor measure feelings toward same-sex and opposite-sex peers and supervisors. The four response alternatives range from like to dislike. This factor accounts for 10 percent of the common variance.

Analysis Including Items Given Only to Men. The extracted factor solution accounted for 45 percent of the total variance and yielded the following three factors:

1. Impact. This factor measures the perceived change, if any, resulting from the addition of women to the ship and crew (i.e., crew performance, efficiency, discipline, ship cleanliness, morale). It accounts for 74 percent of the common variance.

2. Traditionality. This factor assesses men's attitudes toward the roles of women in society, ranging from contemporary/egalitarian views to traditional sex role stereotyping. It accounts for 18 percent of the common variance.

3. Endorsement. This factor measures general attitudes toward integration, ranging from favoring to opposing having women in the crew. It accounts for 8 percent of the common variance.

Analysis Including Items Given Only to Women. This factor solution accounted for 51 percent of the total variance and yielded two factors:

1. Adjustment. This factor measures women's adjustment to and satisfaction with shipboard life. It accounts for 67 percent of the common variance.

2. Workshop Support. This factor addresses the role of the preparatory workshop as a source of continued support to the women once aboard ship. It accounts for 33 percent of the common variance.

Analysis of Variance

Analysis of variance (ANOVA) tests were performed on eight of the nine factors extracted from the three factor analyses.⁵ A-posteriori contrasts, using Scheffe's multiple-range test ($\alpha=.05$) were conducted to investigate differences among mean factor scores. Because of the absence of women CPOs, all gender comparisons were based on personnel in pay grades E-1--E-6.

Two-way ANOVAs were performed to investigate the effects of gender by pay grade, department, and ship⁶ on the four factors emerging from the analyses of responses to items given to both men and women. To determine the effects of fleet and deployment

⁵Since attendance at and evaluation of the workshop was one of the independent variables used in the ANOVAs, it was felt that a similar analysis of the workshop factor would be confusing and superfluous.

⁶Ship #6 is unique in that it has a specialized department found in no other ship in the sample. Thus, all of the ANOVAs that included ship as a variable were performed twice, one with the special department and once without. Any differences in significant results are noted in the findings.

on these factors, workshop effectiveness was used as a third variable in the ANOVAs. The workshops were conducted independently in each fleet and may have acted as a covariant. Thus, a confounding effect could result unless the variances associated with each of these variables were allowed to emerge.

One-way ANOVAs were performed to investigate the effects of pay grade, ship, and department on the three factors emerging from the analyses of responses to items given to men only and to one of the two factors (adjustment) that included items given to women only. In the remainder of this report, these factors will be referred to as Factors 5 through 8. Three-way ANOVAs were performed to investigate the effects of fleet, deployment, and workshop on these factors.

A set of figures was designed for each factor graphing the mean scores of all subgroups yielding significant within-group differences in the ANOVAs. In addition, a mid-point value for each factor was identified by calculating a factor score based on the mid-point response to all the individual items with a factor loading of .30 or greater. A series of t-tests were then performed to determine whether the factor means of the various groups differed significantly from what might be considered a neutral position.

Chi-Square Analysis

Chi-square analyses were used to test for significant differences in responses to the biographical items and the attitudinal items having categorical answers. In addition, certain questions where responses were made using continuous 5 or 6-point scales were recoded to 3-point scales and analyzed as nominal data to aid in interpreting the factor scores.

Analysis of Observations and Interviews

The incidents recorded by the observers were cross-referenced in several ways on special side-notched cards. These observations were summarized in a narrative form and used to shed light on the results obtained from analyzing the surveys. The reports of the interviewers served the same purpose.

RESULTS

ANOVAs of Factors Extracted by Factor Analyses

This section presents results of the ANOVAs performed on the factors extracted by factor analyses. The figures that follow the ANOVA tables for each factor score show only those variables having a significant main effect. However, the scores displayed are based on one-way ANOVAs performed for each gender separately. Moreover, CPOs and commissioned officers, who were omitted from the two-way ANOVAs, were included in the sample in computing one-way ANOVAs so that the full range of attitudes could be discussed.

Factor 1--Problems. Figure 1 presents mean factor scores for subgroups on Factor 1, which addresses problems related to shipboard adaption, work assignments, and interpersonal interactions; and Table 3, results of ANOVAs performed. Overall, women reported having more problems than did men, although female commissioned officers appear to have less problems than do men at the E-6 level and below (Figure 1). However, since all pay grades had factor score means above the mid-point, the average response for each group indicates a moderate degree of problems. Departmental differences showed

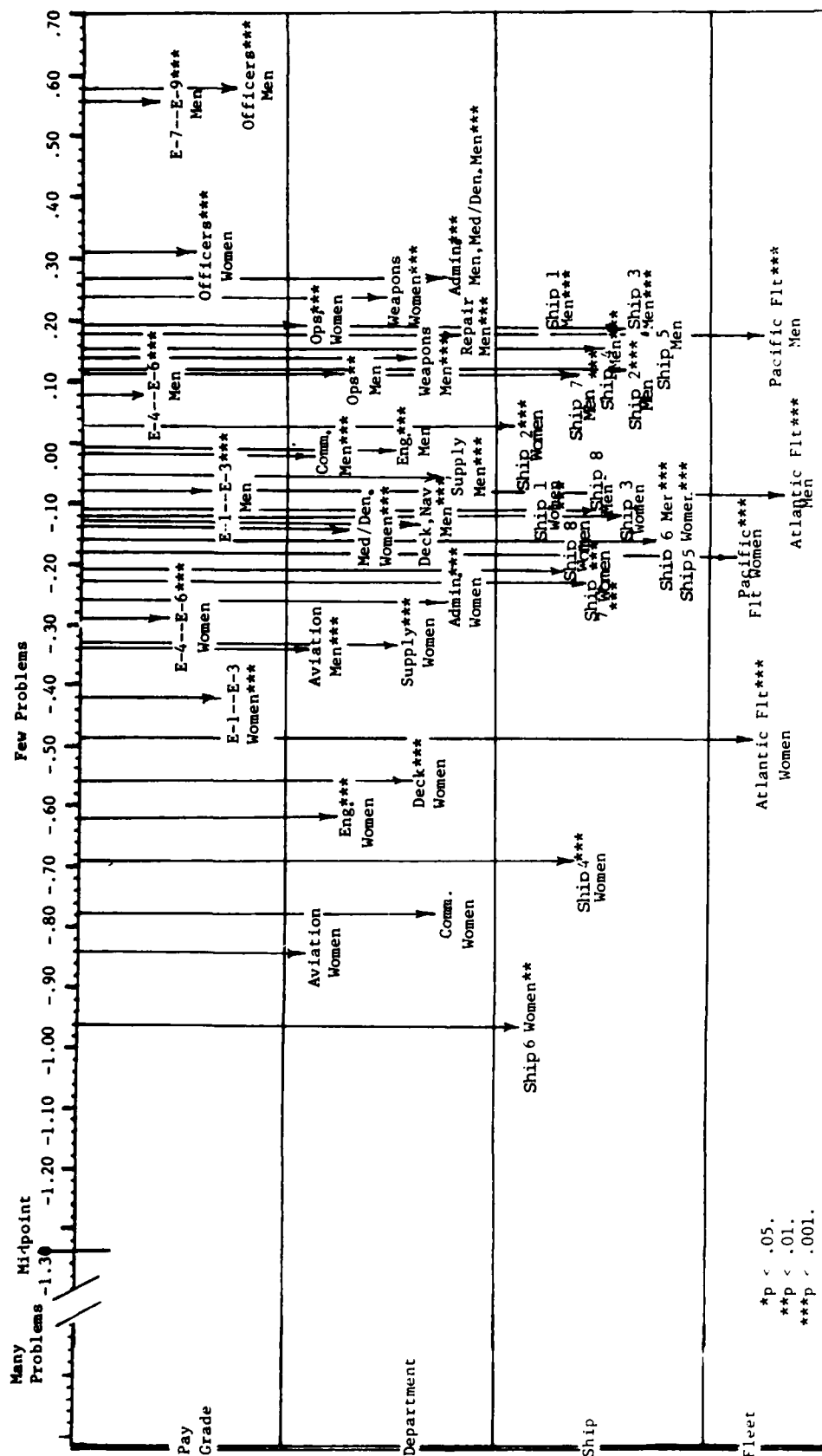


Figure 1. Distribution of mean scores on the problem factor for those variables yielding a significant within-group difference in the ANOVAs. Asterisks show groups with scores that deviate significantly from neutrality.

Table 3
Results of ANOVAs Performed on the Problems Factor

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	p
Two-way Analyses:					
Gender ^a	35.821	1	35.821	56.290	.000
Pay grade	17.875	1	17.875	28.090	.000
Interaction	0.003	1	0.003	0.004	.947
Residual	1881.731	2957	0.636		
Gender ^a	33.714	1	33.714	54.275	.000
Department	80.229	10	8.023	12.916	.000
Interaction	12.770	10	1.277	2.056	.025
Residual	2067.228	3328	0.621		
Gender ^a	44.949	1	44.949	72.820	.000
Ship	83.586	7	11.941	19.345	.000
Interaction	23.955	7	3.422	5.544	.000
Residual	2099.309	3401	0.617		
Three-way Analysis:					
Fleet	44.246	1	44.246	70.478	.000
Deployment status	0.971	1	0.971	1.546	.214
Workshop effectiveness	13.089	3	4.363	6.949	.000
Interactions					
Fleet x deployment	13.534	1	13.534	21.557	.000
Fleet x workshop	2.157	3	.719	1.145	.330
Deployment x workshop	3.212	3	1.071	1.705	.164
3-way	7.475	3	2.492	3.969	.008
Residual	2070.510	3298	0.628		

^aBased on responses of E-1--E-6 personnel only.

that women in the aviation, communication, engineering, deck, and supply departments were experiencing the most problems; and women in weapons and operations, the least. The pattern for men was somewhat similar, with those in aviation, deck, and navigation reporting significantly more problems than did those in all other departments aboard ship. Marked ship and fleet differences were evident for both men and women, but deployment had no effect. Women in ships #6 and 4 and men in ships #6 and 8 experienced significantly more difficulty than did same-sex personnel aboard the other ships. Men and women serving in the Atlantic Fleet had significantly more problems than did those in the Pacific Fleet.

The interaction between fleet and deployment (Table 3) indicated that those in the Atlantic Fleet who deployed experienced fewer problems than did those who did not deploy, whereas a reversal of this pattern was found in the Pacific Fleet. A three-way interaction was obtained because of the atypical pattern of relationships in the Atlantic ships.

Attendance at a preparatory "Women at Sea" workshop was related to scores on the problem factor. Men who did not attend a workshop or those who attended and rated the workshop as poor reported more problems than did men who attended the workshop and evaluated it more positively. In addition, men who were assigned to the ship after women came aboard had less problems than did men who participated in the transition from an all-male to a mixed-gender crew (untabed; $F(1,2969) = 6.337, p < .02$).

Since Factor 1 is not homogeneous in respect to the nature of the problems addressed, chi-square analyses were conducted for each item by gender to gain more specific information. As shown in Table 4, E-1--E-3 women had more difficulties than did E-1--E-3 men in 7 of the 14 problem areas; and E-4--E-6 women, in 7 (not always the same areas), although the relationship was weak. For E-1--E-3 personnel, the largest differences were on tasks involving physical strength and crowded quarters/lack of privacy; for E-4--E-6 petty officers, the largest difference was concerning having to prove oneself to peers or below. Although women officers reported fewer problems than did enlisted women, a substantial number were having difficulty proving themselves to superiors (43%) or subordinates (37%) and coping with their lack of training (37%) (untabed).

Table 4
Responses of Men and Women to Items Having Loadings
of .35 or Greater on the Problem Factor

Item	Percentage Having Problems					
	E-1--E-3			E-4--E-6		
	Men	Women	χ^2	Men	Women	χ^2
Having to prove myself to peers and below	25	38	15.11**	19	42	45.12**
Having to prove myself to superiors	40	51	8.92*	26	43	20.76**
Safety on board ship	24	30	2.68	23	29	1.98
Access to chain of command	25	26	.13	21	21	.00
Lack of training and direction from superior	40	45	1.41	35	41	1.91
Safety on base or pier	13	17	1.82	14	25	12.30**
Performing assigned tasks	10	14	2.32	13	12	.15
Taking orders from a male superior	13	11	.89	10	10	.02
Working with male crew members	13	22	12.60**	14	24	9.64*
Tasks requiring physical strength	19	54	111.41** ^a	18	38	32.60**
Boredom	58	60	.20	44	47	.32
Use of profanity by others	35	54	26.23**	37	56	21.19**
Feeling comfortable about going to sick call	28	43	18.17**	25	27	.46
Crowded quarters and lack of privacy	58	87	58.66** ^a	57	79	28.83**

^a The phi measure of strength of relationship exceeds .20.

* $p < .01$.

** $p < .001$.

Factor 2--Treatment. Items included in this factor address treatment of women compared to treatment of men. Women were asked if they were receiving favoritism or being discriminated against; and men, if they believed women were receiving special treatment or discrimination. Table 5 presents results of the ANOVAs performed on the Treatment factor; and Figure 2, mean factor scores for groups yielding significant between-group differences.

Table 5
Results of ANOVAs Performed on the Treatment Factor

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	p
Two-way Analyses:					
Gender ^a	175.964	1	175.964	235.591	.000
Pay grade	0.698	1	0.698	0.935	.000
Interaction	0.010	1	0.010	0.013	.908
Residual	2039.054	2730	0.747		
Gender ^a	169.864	1	169.864	232.621	.000
Department	46.626	10	4.663	6.385	.000
Interaction	10.143	10	1.014	1.389	.179
Residual	2250.524	3082	0.730		
Gender ^a	166.947	1	166.947	242.469	.000
Ship	152.788	7	21.827	31.701	.000
Interaction	13.675	7	1.954	2.837	.000
Residual	2166.109	3146	0.689		
Three-way Analysis:					
Fleet	86.997	1	86.997	117.830	.000
Deployment status	0.856	1	0.856	1.159	.282
Workshop effectiveness	12.788	3	4.263	5.773	.001
Interactions					
Fleet x deployment	0.334	1	0.334	0.453	.501
Fleet x workshop	15.370	3	5.123	6.939	.000
Deployment x workshop	1.662	3	0.554	0.750	.522
3-way	9.187	3	3.062	4.148	.006
Residual	2253.370	3052	0.738		

^aBased on responses of E-1--E-6 personnel only.

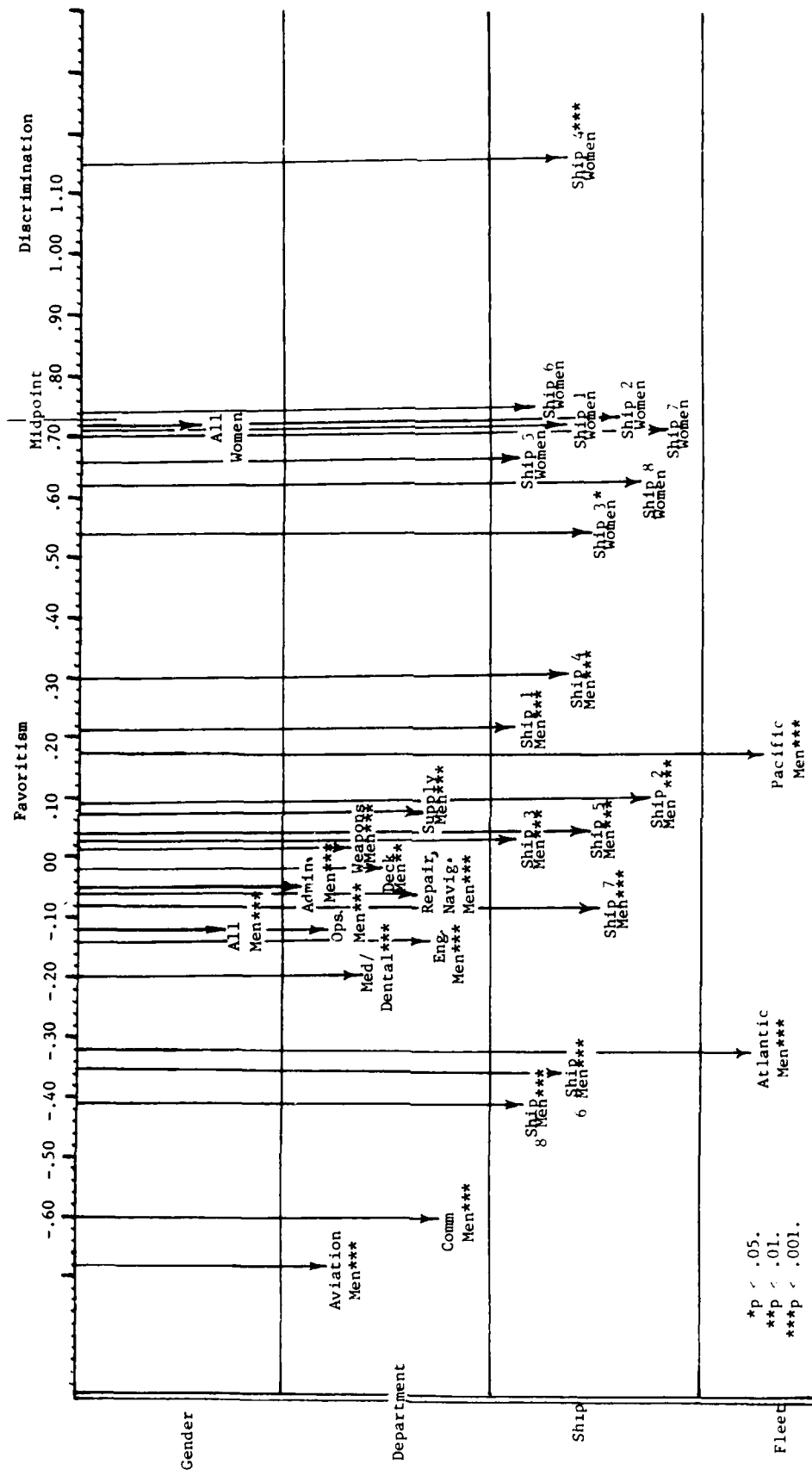


Figure 2. Distribution of mean scores on the treatment factor for those variables yielding a significant within-group difference in the ANOVAs. Asterisks show groups with scores that deviate significantly from neutrality.

Men and women scored very differently on Factor 2 (Figure 2). Women felt they were being treated equitably, whereas men believed that women were receiving special consideration. The pay-grade effect (Table 5) was not significant in this two-way analysis. A main effect for department was found, due to the fact that men in aviation and communications expressed the opinion that women are treated with favoritism more strongly than did the others. Although the factor scores of women by department did not differ, the effect for ship was significant for both genders. Women in ship #4 felt discriminated against and the men in ship 4 supported this perception in that they saw less favoritism than did men in the other ships. Women in ship #3 thought they were receiving some special treatment, while men in ships #8 and 6 perceived the most preferential treatment.

The ANOVA also yielded a significant interaction between gender and ship. There was no difference in the perceptions of women by fleet but men in the Atlantic Fleet observed more favoritism than did those in the Pacific. The workshop effect was also due to the differential responses of men but not women. Those who did not attend a preparatory workshop or who judged the workshop they attended as poor saw a greater degree of inequity than did men who attended a fair or good workshop. The interaction between fleet and workshop effectiveness was indicative of the following patterns:

1. In the Pacific Fleet, the relationship was linear, with attending a good workshop linked to a low perception of favoritism and attending a poor workshop seeming to have a more negative effect than not attending any.

2. In the Atlantic Fleet, the most negative attitudes were held by those who had not participated in a workshop. The three-way interaction occurred because deployment did not affect the perceptions in the Pacific Fleet but did affect perceptions at the various workshop levels in the Atlantic Fleet (crews of deploying ships saw less favoritism than did crews of nondeploying ships except when they viewed the workshop as poor). Deploying with an integrated crew had no effect on this factor.

Table 6 reveals that men saw favoritism in all aspects of the treatment of women. The item concerning assignment to jobs involving physical strength, where differential treatment could legitimately occur, drew the largest percentage of "favoritism" responses from both genders, as well as the greatest percentage of "discriminators" responses from men. For comparison purposes, the survey included two items questioning how many men and women received preferential treatment. The responses to these items, which did not have high loadings on Factor 2, are presented in Table 7. Both genders perceived more favoritism toward women than men. It is informative, however, to see that, despite the high percentages in Table 6, 62 percent of the men felt that none or only a few of the women were receiving special treatment.

Factor 3--Working Together. Items in Factor 3 address interactions between women and men in the job setting. Table 8 presents the results of the two-way and three-way ANOVAs; and Figure 3, the distributions of mean scores.

Women were more positive about working together than were men, although Figure 3 reveals that both genders gave interpersonal relationships at work a positive rating. Pay grade did not yield a significant main effect but the interaction effect between pay grade and gender was significant, probably due to the atypical responses of male E-4--E-6s. The factor score mean for these petty officers was very similar to those of E-1--E-3s of either gender, providing the exception to the linear relationship of increasingly positive responses with increasing pay grade.

Table 6
Responses of E-1--E-6 Personnel to Individual Treatment Items

Item	Percentage			χ^2
	Favoritism	Equal Treatment	Discrimination	
Discipline:				165.94* ^a
Women	15	71	14	
Men	52	40	8	
Job assignments not involving physical strength:				211.27* ^a
Women	14	76	10	
Men	55	39	6	
Job assignments requiring physical strength:				148.54* ^a
Women	33	53	14	
Men	59	23	18	
Policies on uniforms and general personal appearance:				117.95*
Women	11	75	13	
Men	38	56	5	
Special privileges:				175.498* ^a
Women	5	87	7	
Men	40	58	2	
Performance marks:				178.59* ^a
Women	3	86	11	
Men	38	59	3	
Discharges and reassignments:				150.26* ^a
Women	10	80	10	
Men	46	49	5	

^aCramer's phi measure of strength of relationship exceeds .20.

*p<.001.

Table 7
Number of Women and Men Receiving Preferential Treatment

Item	Responses (%)						χ^2
	None		Only A Few		Many		
	Women	Men	Women	Men	Women	Men	
How many women on your ship are receiving favoritism?	28	30	55	32	17	38	58.69**
How many men on your ship are receiving favoritism?	46	56	45	48	9	6	7.95*

Note. Cramer's phi measure of strength of association is <.20.

*p<.05.

**p<.001.

Table 8
Results of ANOVAs Performed on the Working Together Factor

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	p
Two-way Analyses:					
Gender ^a	3.184	1	3.184	6.310	.012
Pay grade	0.004	1	0.004	0.007	.931
Interaction	3.995	1	3.995	7.916	.005
Residual	1204.603	2387	0.505		
Gender ^a	3.296	1	3.296	6.766	.009
Department	49.088	10	4.909	10.075	.000
Interaction	4.628	10	0.463	0.950	.486
Residual	1314.545	2698	0.487		
Gender ^a	3.951	1	3.951	8.367	.004
Ship	83.302	7	11.900	25.201	.000
Interaction	6.798	7	0.971	2.057	.045
Residual	1302.382	2758	0.472		
Three-way Analysis:					
Fleet	29.733	1	29.733	63.107	.000
Deployment status	0.010	1	0.010	0.022	.882
Workshop effectiveness	18.891	3	6.297	13.365	.000
Interactions					
Fleet x deployment	21.770	1	21.770	46.207	.000
Fleet x workshop	3.321	3	1.107	2.350	.071
Deployment x workshop	2.454	3	0.818	1.736	.158
3-way	1.580	3	0.527	1.118	.341
Residual	1256.547	2667	0.471		

^aBased on responses of E-1--E-6 personnel only.

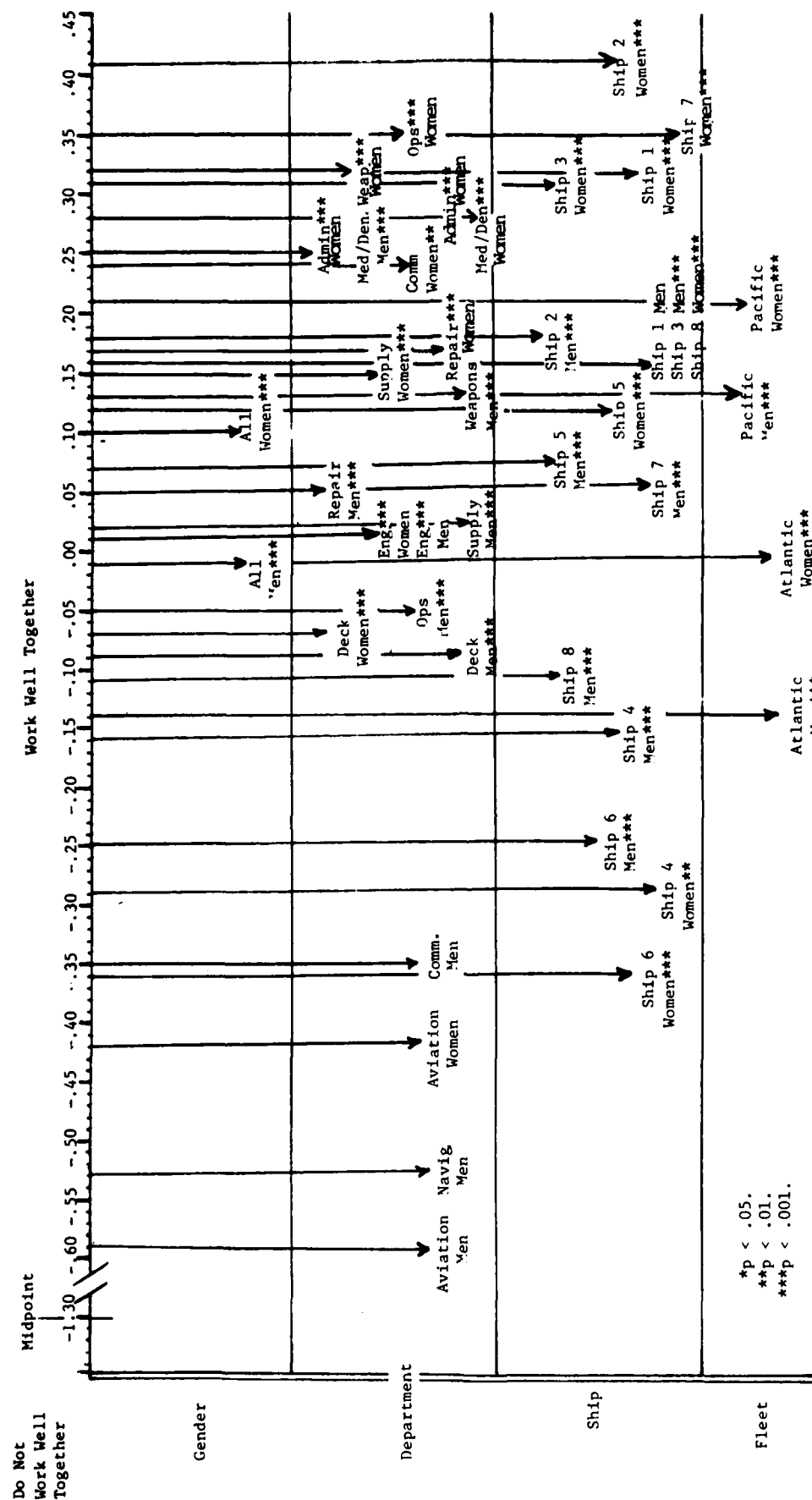


Figure 3. Distribution of mean scores on the working together factor for variables yielding a significant within-group difference in the ANOVAs. Asterisks show groups with scores that deviate significantly from neutrality.

A significant department effect was also found. Men and women in aviation, along with men in navigation and communication, expressed the opinion that cross-gender interactions were neither positive nor negative. The departments experiencing the best interactions were administration and medical/dental for men and women, communications for women, and weapons and operations for men. The main effect for ship and the interaction between ship and gender were both significant. Women and men aboard ships #6 and 4 scored well below those in the other crews. The fleet effect was again due to the more positive scores of those in the Pacific Fleet; there was no deployment effect. However, the interaction between these two variables was significant due to deploying crews in the Atlantic Fleet expressing a more optimal opinion of working relationships than did those that did not deploy. A reverse pattern existed in the Pacific Fleet. The workshop effect was identical to that observed for Factors 1 and 2, in that those who attended no workshop or a poorly presented one were not as positive as those who attended one that was rated as good or fair.

Responses to the individual items in this factor revealed that 59 percent of the men felt that the two genders worked well together; and 38 percent, that women were distracting (untabled). By contrast, 75 percent of the women thought that the two genders worked well together, despite the fact that over half said they were experiencing difficulty with men's behavior toward women (see Tables 9 and 10). These seeming inconsistencies may simply mean that persons recognize the fact that problems exist, but still believe that integration is working well.

Factor 4--Affect. Results of the ANOVAs performed on Factor 4, which measured crew members' feelings about their peers and supervisors, are shown in Table 11. The significant main effect for gender is derived from the greater feelings women expressed for their work associates and superiors of both genders.

Figure 4 presents the mean factor scores for the subgroups contributing to the significant main effects. The distribution by department shows only men's responses because the one-way ANOVA for women's responses was not significant. Although all of the departments had mean scores that were significantly different from the neutral point in a positive direction, the Duncan multiple-range test revealed that men in the administration, medical/dental, operations, and deck departments expressed more liking for their shipmates than did those in other departments, especially engineering and aviation.

The distributions by ship showed greater variance among women's mean scores than among men's. Women aboard ship #3 had the greatest degree of liking for their shipmates; and those on ship #4, the least. Among men, those in ships #1 and 4 expressed the most comradeship; and those in ships #5 and 6, the least. The basis for the significant interaction between gender and ship is apparent in the relative position of each mean within the range of scores for men and women. While the main effects for fleet and deployment were not significant, there was an interaction. Nondeploying crews in the Pacific Fleet expressed the most liking for their shipmates; and those in the Atlantic Fleet, the least. The effect of workshop was again significant. The one-way ANOVAs, controlling for gender, revealed that only the responses of women differed. The nature of this difference was identical to that observed on the previous factors. The interaction between fleet and workshop again resulted from findings in the Pacific Fleet indicating that attending no workshop is better than attending a poor one and those in the Atlantic Fleet indicating that not attending a workshop is linked to the least positive results.

Table 9

Summary of Open-ended Responses to Item Concerning
Problems with Men's Behavior Toward Women

Problem	Number of Responses by Ship ^a								Total
	1	2	3	4	5	6	7	8	
Female Respondents									
Harass, spread rumors, use profanity in excess	--	7	8	3	10	12	9	14	63
Treat women as if they don't belong on ship; as second class citizens	--	2	2	3	7	11	1	9	35
Are arrogant, resentful, condescending	--	5	6	6	0	5	0	9	31
Make women prove themselves; feel women are worthless	--	1	1	2	4	7	3	2	20
Treat women as sex objects; don't consider them to be sailors	--	3	1	5	2	4	0	2	17
Miscellaneous	--	6	3	3	4	5	4	3	28
Total	--	24	21	22	27	44	17	39	194
Percent of females responding	--	39	55	54	66	77	44	63	57
Male Respondents									
Show favoritism, hoping for sexual favors; do women's work for them	--	8	22	6	--	53	18	54	161
Rude, profane, spread rumors, condescending, sexually harassing	--	3	24	4	--	24	10	12	77
Don't treat women as equals; feel women don't belong and that they can't perform	--	5	6	4	--	23	12	24	74
Act macho, jealous, competitive, show-off	--	5	11	3	--	22	8	21	70
Treat women as sex objects	--	9	11	2	--	15	2	15	54
Act resentful, distrustful	--	0	6	1	--	8	4	3	22
Fraternize too much and hurt productivity	--	2	4	1	--	4	2	9	22
Miscellaneous	--	2	5	6	--	18	11	0	42
Total	--	34	89	27	--	167	67	138	522
Percent of males responding	--	17	16	30	--	31	27	27	24

Note. This table is based on the explanations of persons who saw a problem with men's behavior toward women.

^a This item was not included in men's or women's survey on ship #1 or in men's survey on ship #5.

Table 10

Summary of Open-ended Responses to Item Concerning
Problems With Women's Behavior Toward Men

Problem	Responses	
	N	%
Male Respondents		
Use femininity, sexuality to gain favors; flirt	160	39
Snobby, conceited	100	25
Resentful, hostile, afraid of men	54	13
Not work oriented, too social	35	9
Immature, moody, bitchy	31	8
Lustful, sexual tease	26	6
Total	406	100
Percentage of males responding		19
Female Respondents		
Use femininity, sexuality to get away with things	30	59
Hostile, resentful, distrustful because of the way they are treated by men	16	31
Try too hard to prove themselves	5	10
Total	51	100
Percentage of females responding		15

Table 11
Results of ANOVAs Performed on Affect Factor

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	p
Two-way Analyses:					
Gender ^a	30.624	1	30.624	51.007	.000
Pay grade	0.093	1	0.093	0.155	.694
Interaction	1.607	1	1.607	2.677	.102
Residual	742.677	1237	0.600		
Gender ^a	19.581	1	19.581	33.045	.000
Department	24.565	10	2.456	4.146	.000
Interaction	7.982	10	0.798	1.347	.200
Residual	803.507	1356	0.593		
Gender ^a	23.096	1	23.096	39.468	.000
Ship	23.027	7	3.290	5.621	.000
Interaction	12.811	7	1.830	3.127	.003
Residual	817.509	1397	0.585		
Three-way Analysis:					
Fleet	1.808	1	1.808	2.958	.086
Deployment status	0.434	1	0.434	0.710	.399
Workshop effectiveness	6.861	3	2.287	3.743	.011
Interactions					
Fleet x deployment	7.069	1	7.069	11.569	.001
Fleet x workshop	7.091	3	2.364	3.868	.009
Deployment x workshop	1.007	3	0.336	0.549	.649
3-way	1.154	3	0.385	0.629	.596
Residual	824.285	1349	0.611		

^aBased on responses of E-1--E-6 personnel only.

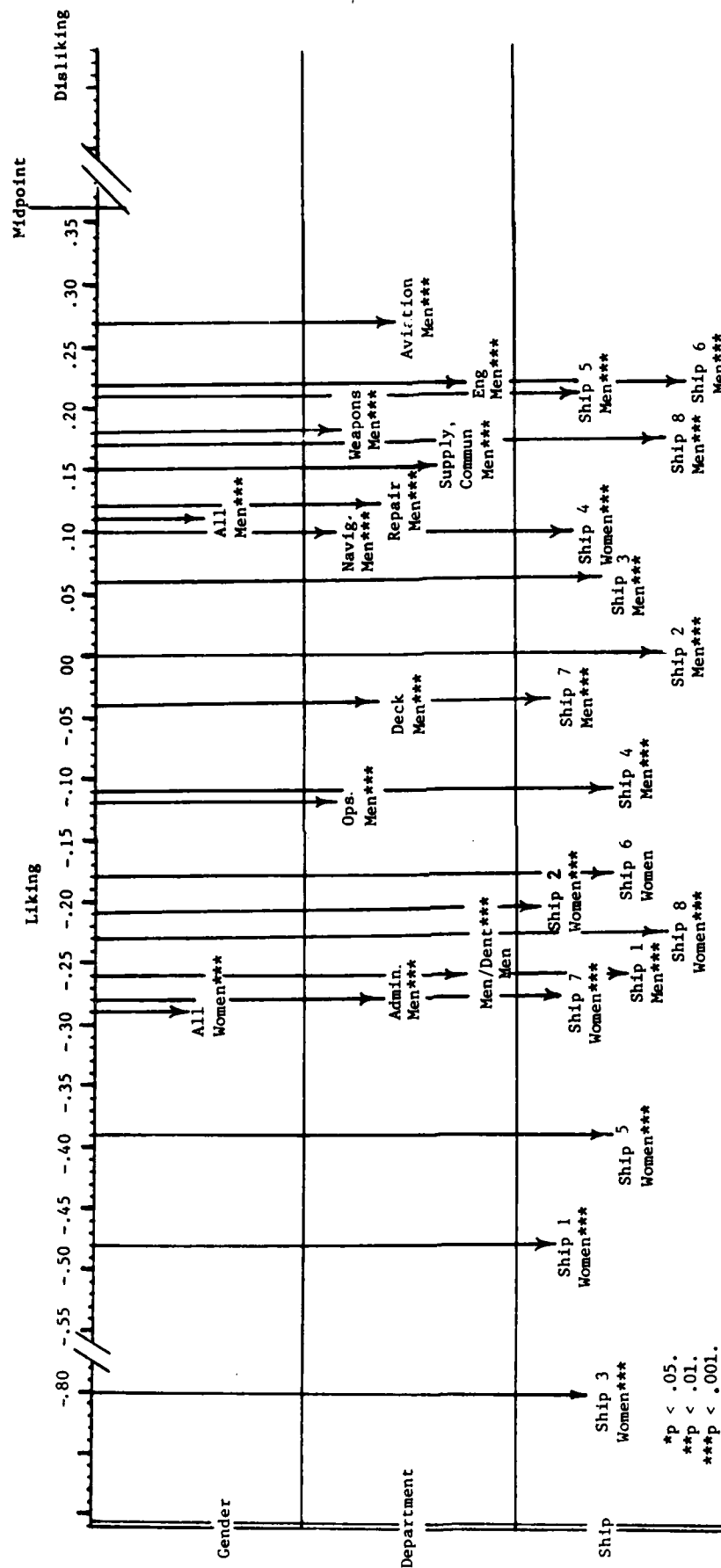


Figure 4. Distribution of mean scores on the affect factor for those variables yielding a significant within-group difference in the ANOVAs. Asterisks show groups with scores that deviate significantly from neutrality.

Since Factor 4 consists of items in which peers and superiors, males and females are used as the referents in all combinations, the ANOVAs yield no information on whether women are as well liked as men. Several chi-square analyses were conducted to investigate this question, which is based on Kanter's (1977) theory of the dynamics occurring in unbalanced work environments. Table 12 shows that both genders expressed a greater liking for male shipmates and supervisors than for female ones. It appears that female supervisors are in the least enviable position aboard ship.

Table 12
A Comparison of Men's and Women's Liking for Same-sex
and Opposite-sex Supervisors and Peers

How do you feel about . . .	Response				χ^2
	Like a Lot (%)	Like Somewhat (%)	Dislike Somewhat (%)	Dislike A lot (%)	
Men Respondents (N=2550)					
Men you work with?	34	60	5	1	991.664 *
Women you work with?	22	63	11	4	
Male supervisors?	20	60	14	6	481.387 *
Female supervisors?	17	49	18	16	
Women Respondents (N=377)					
Men you work with?	46	48	5	1	150.381 *
Women you work with?	39	51	8	2	
Male supervisors?	33	54	11	2	130.423 *
Female supervisors	30	50	16	4	

Note. All Cramer's phi measures of the strength of association exceed .35.

* $p < .001$.

Factor 5--Impact. Figure 5 presents distribution of mean scores on the impact factor, which measures perceptions of the effect of integration on the ship and its crew; and Table 13, results of the ANOVAs. Analyses were based only on responses of men who had been serving aboard the ship before enlisted women were assigned (N=1898). As shown in Table 13, significant main effects were found for all variables except deployment.

Interestingly, CPOs (E-7--E-9s) were positive about the changes that had occurred aboard ship as a consequence of assigning women to the crew (see Figure 5). Analysis of the ten individual impact items (untabed) showed that CPOs saw the greatest improvement in morale and the appearance of the crew. Petty officers (E-4--E-6s), whose mean score indicated a negative assessment, felt discipline and leadership/supervision had

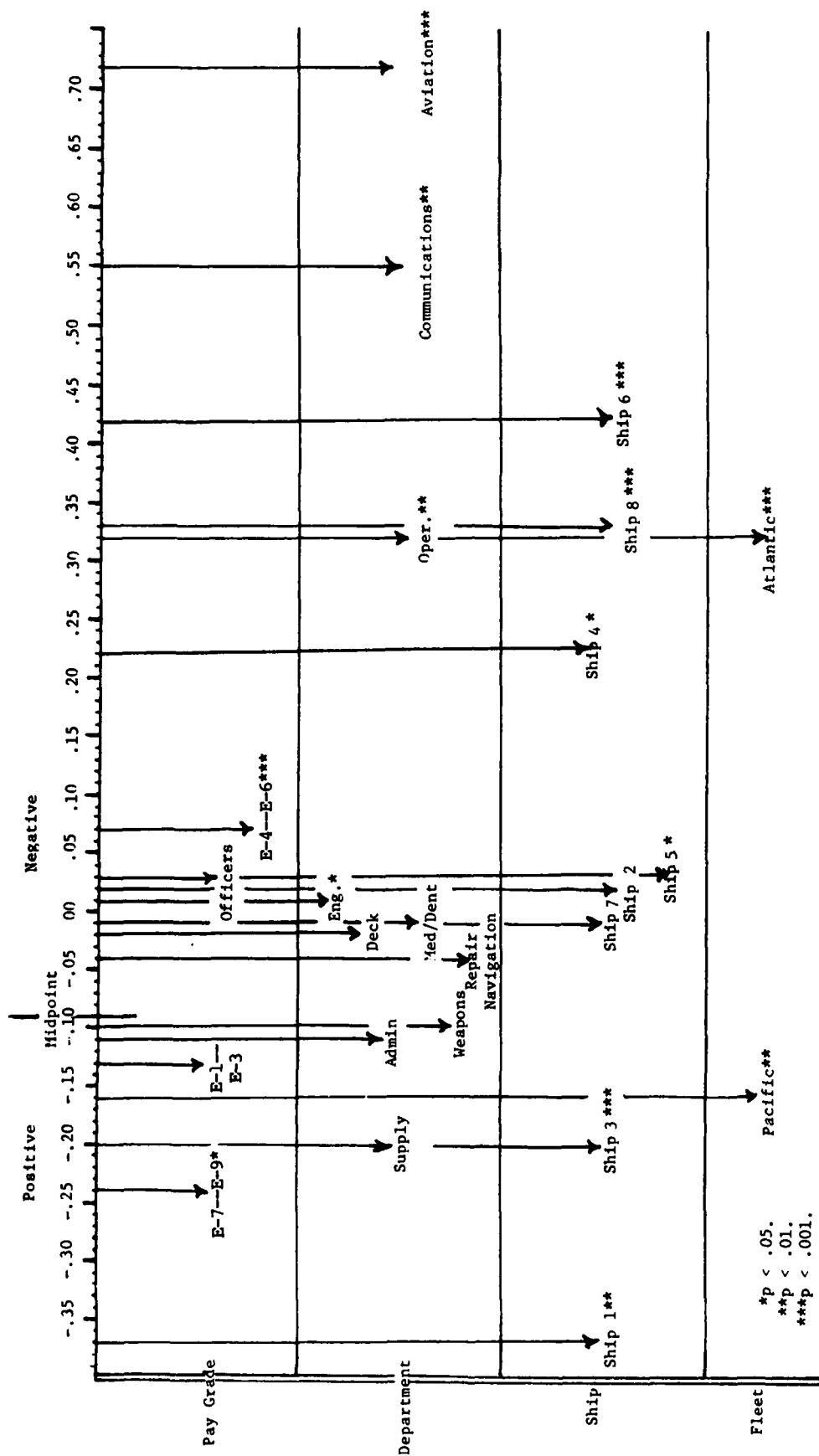


Figure 5. Distribution of mean scores on the impact factor for those variables yielding significant within-group differences in the ANOVAs. Asterisks show groups with scores that deviate significantly from neutrality.

Table 13
Results of ANOVAs Performed on the Impact Factor

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	p
Two-way Analyses:					
Pay grade	22.2339	3	7.4113	7.203	.000
Residual	1849.0305	1797	1.0290		
Department	55.1495	10	5.5149	5.327	.000
Residual	1923.6770	1858	1.0353		
Ship	155.1580	7	22.1654	22.516	.000
Residual	1860.5571	1890	0.9844		
Three-way Analysis:					
Fleet	85.057	1	85.057	89.930	.000
Deployment status	3.545	1	3.545	3.748	.053
Workshop effectiveness	86.621	3	28.874	30.528	.000
Interactions					
Fleet x deployment	25.643	1	25.643	27.113	.000
Fleet x workshop	3.912	3	1.304	1.379	.247
Deployment x workshop	0.796	3	0.265	0.281	.839
3-way	1.719	3	0.573	0.606	.611
Residual	1716.638	1815	0.946		

suffered the most. Men in 7 of the 11 departments felt that women had made very little change in the way the ship and its crew functioned. The most negative group was the aviation department, followed by communications, operations, and engineering. Over half of the men in aviation felt that the presence of women was having a negative effect on morale, the efficiency of running the ship, discipline, the quality and quantity of work accomplished, team efforts, and leadership/supervision. Differences among ships are also obvious in Figure 5. Two ships saw a positive impact; two, no change; and four, a negative impact.

Responses from the Pacific Fleet were positive; and those from the Atlantic Fleet, negative. Although the main effect for deployment did not achieve significance, this variable did significantly interact with fleet. Nondeploying respondents in the Atlantic Fleet viewed the impact of women as negative; and those in the Pacific, as positive. Attendance at a good workshop was linked to a positive assessment of impact (mean = -.45); and attendance at a poor workshop, to a negative assessment (Mean = .52).

Two additional items in the men's survey that did not load on any factor also address the impact of women on the crew. Chi-square analyses of responses to these items conducted by pay grade, department, and ship were all significant at the .001 level, although the strength of association was weak ($p < .20$). Table 14 presents the distribution by department so that the areas in which men are having to compensate for women's lesser strength can be identified.

Table 14
Distributions of Responses by Department for Two Impact Items

Item	Department							Overall (N=3,063) (%)
	Adminis- tration (N=131) (%)	Engin- eering (N=793) (%)	Deck (N=233) (%)	Supply (N=391) (%)	Medical/ Dental (N=55) (%)	Weapons (N=143) (%)	Repair (N=1,125) (%)	Aviation (N=100) (%)
Women have lessened my chances for getting the job I want.								
Yes	11	14	25	24	16	11	14	31
Undecided	14	14	20	16	11	15	16	17
No	75	72	55	61	73	74	71	52
Women have increased my workload.								
Yes	36	44	47	33	37	21	23	52
Undecided	13	4	18	17	17	20	19	16
No	51	52	35	50	46	59	57	33

Note. Chi-squares for these distributions were significant ($p < .001$). Cramer's phi measure of strength of association is $> .20$.

In general, the women were not representing a threat to the men in regard to denying them desirable jobs. The problem of increased workload was more substantial. Across all groups, over half of the men stated that women had not lessened their chances for getting the job they wanted; however, at least 40 percent of those in operations, deck, and aviation felt that women had increased their workload.

Factor 6--Traditionality. The traditionality factor consists of six items (Table 2) that measure men's attitudes toward women's roles, aggressiveness, and potential as naval personnel. Scores range from contemporary or egalitarian (low) to traditional views (high). Table 15 presents the results of the ANOVAs performed on the factor; and Figure 6, the distribution of mean scores.

Table 15
Results of ANOVAs Performed on the Traditionality Factor

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	p
One-way Analyses:					
Pay grade	47.6049	3	15.8683	21.340	.000
Residual	2104.3905	2830	0.7436		
Department	33.8579	10	3.3858	4.502	.000
Residual	2192.8906	2916	0.7520		
Ship	58.9942	7	8.4277	11.320	.000
Residual	2212.6724	2972	0.7445		
Three-way Analysis:					
Fleet	8.616	1	8.616	11.547	.001
Deployment status	0.463	1	0.463	0.621	.431
Workshop effectiveness	10.437	3	3.479	4.662	.003
Interactions					
Fleet x deployment	23.162	1	23.162	31.041	.000
Fleet x workshop	2.384	3	0.795	1.065	.363
Deployment x workshop	2.169	3	0.723	0.969	.406
3-way	3.113	3	1.038	1.391	.244
Residual	2162.387	2898	0.746		

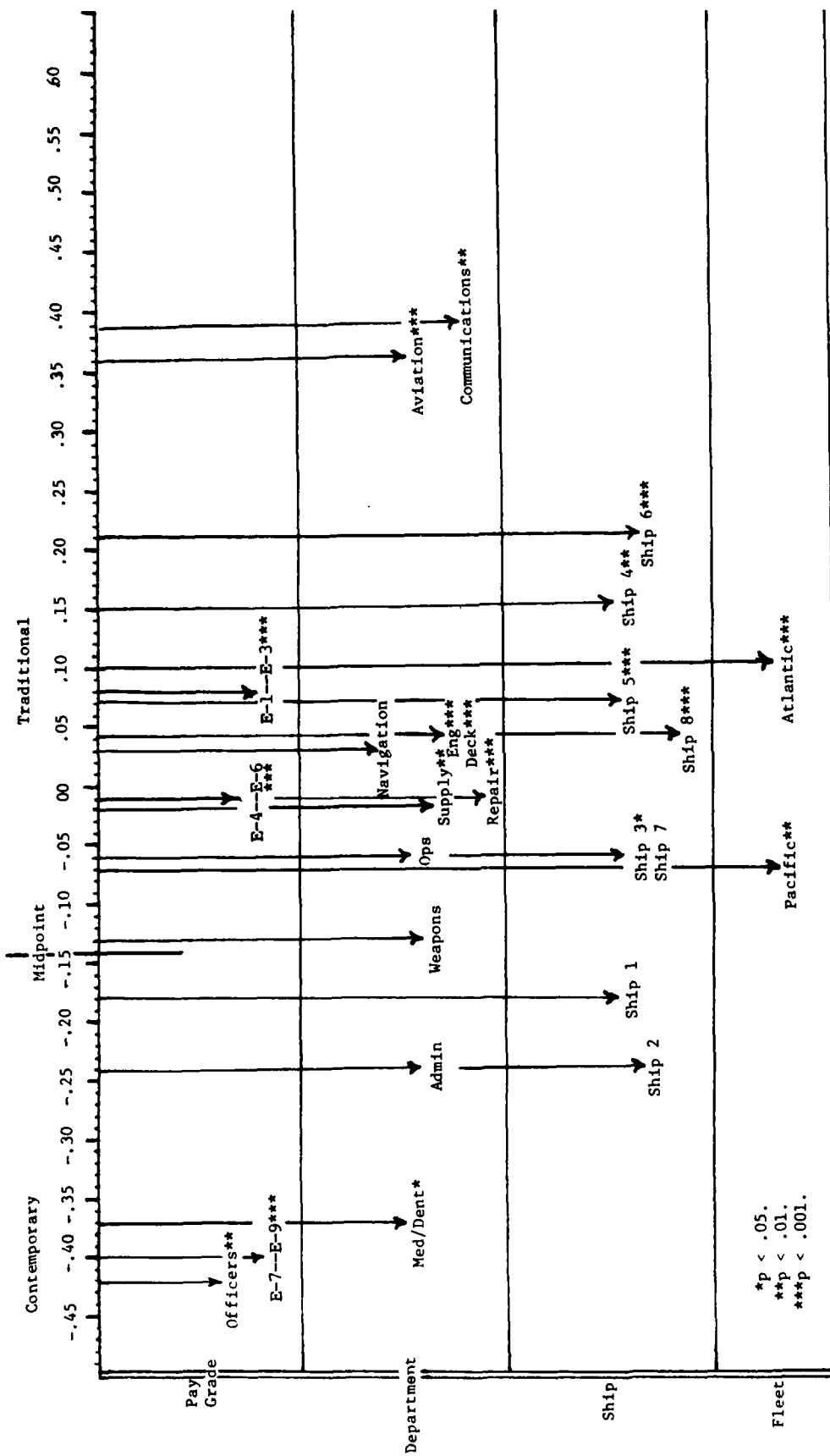


Figure 6. Distribution of mean scores on the traditionality factor for those variables yielding a significant within-group difference in the ANOVAs. Asterisks show groups with scores that deviate significantly from neutrality.

As shown in Figure 6, the pay-grade effect was a result of the egalitarian attitudes of the commissioned and chief petty officers in contrast to the traditional views of the E-1--E-6s. This pattern is consistent with the linear relationship found for pay grade prior to integration, demonstrating the stability of these beliefs despite intervening experiences. The departments aboard ship also showed little change. Medical/dental was the most contemporary; and communications, the most traditional. Only the repair department shifted, going from neutral to traditional. None of the mean factor scores by ship were in the contemporary area on either the pre- or postintegration surveys.

In the three-way ANOVA, both fleet and workshop effectiveness yielded significant main effects. Men in the Atlantic Fleet were more traditional than were those in the Pacific Fleet. The effect of workshop was linear in that, the better the presentation, the fewer traditional endorsements; not participating in a workshop was linked to a significantly traditional orientation. The sole interaction was due to the fact that nondeploying Atlantic Fleet personnel hold the most traditional attitudes; and nondeploying Pacific Fleet personnel, the least traditional attitudes.

Factor 7--Endorsement. The endorsement factor measures men's acceptance or rejection of women in the crew after working with them from 9 to 31 months. Table 16 presents the results of the ANOVAs performed on this factor; and Figure 7, the distribution of mean scores.

Table 16
Results of ANOVAs Performed on the Endorsement Factor

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	p
One-way Analyses:					
Pay grade	15.5787	3	5.1929	4.759	.003
Residual	1331.2576	1220	1.0912		
Department	45.7315	10	4.5732	4.280	.000
Residual	1347.2942	1261	1.0684		
Ship ^a	98.9964	6	16.4994	16.022	.000
Residual	1326.4144	1288	1.0298		
Three-way Analysis:					
Fleet	47.481	1	47.481	47.614	.000
Deployment status	1.511	1	1.511	1.515	.219
Workshop effectiveness	44.728	3	14.909	14.951	.000
Interactions					
Fleet x deployment	21.783	1	21.783	21.844	.000
Fleet x workshop	2.895	3	0.965	0.968	.407
Deployment x workshop	5.119	3	1.706	1.711	.163
3-way	2.141	3	0.714	0.716	.543
Residual	1245.502	1249	0.997		

^aThe items comprising this factor were not on the form of the postintegration survey administered aboard ship #1.

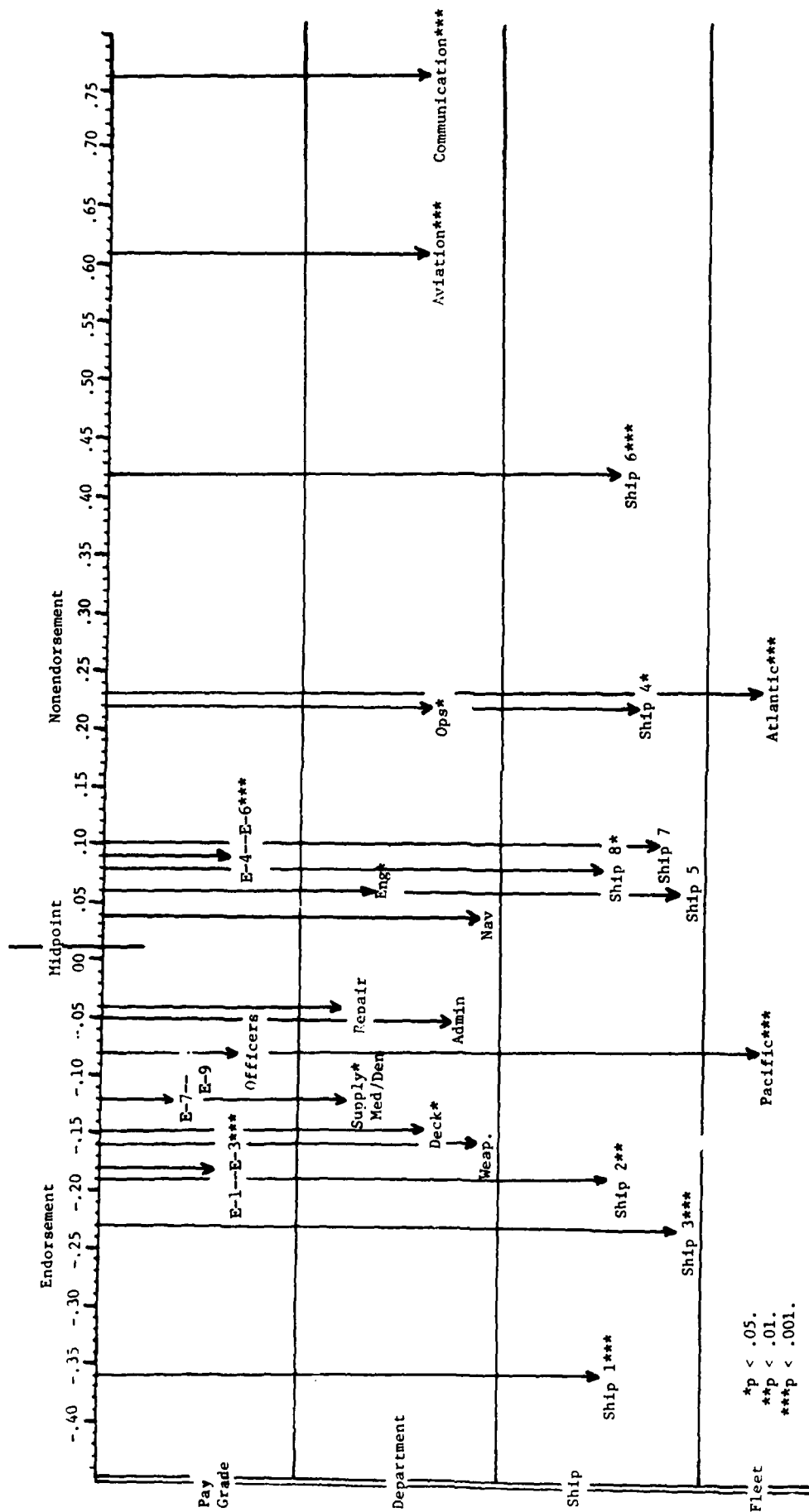


Figure 7. Distribution of mean scores on the endorsement factor for those variables yielding a significant within-group difference in the ANOVAs. Asterisks show groups with scores that deviate significantly from neutrality.

Highly significant main effects for pay grade, department, ship, fleet, and workshop were obtained for this factor. Nonrated men approved of women as shipmates, commissioned and chief petty officers were neutral, and petty officers disapproved. The results by department were evenly divided: Men in deck, weapons, supply, and medical/dental endorsed having women in their ship; those in administration, repair, navigation, and engineering were neutral; and those in operations, aviation, and communications rejected women at sea. Men in ships #1, 2, and 3 accepted their female shipmates; those in ships #5, 7, and 8 were neutral; and those in ships #4 and 6 preferred an all-male crew.

The fleet effect was strong, revealing the positive attitude toward integration in the Pacific Fleet, as contrasted to the negative orientation in the Atlantic Fleet. Deployment again failed to exhibit a main effect but interacted significantly with fleet. Nondeploying personnel in the Pacific Fleet endorsed women in their ships, whereas nondeploying personnel in the Atlantic Fleet were at the negative end of the distribution. The workshop effect resulted from the strong endorsement by men who attended an excellent workshop (Mean = $-.33$) versus rejection by those who attended a poor workshop (Mean = $.59$).

This factor includes two items that provide what is probably the most succinct indicator of the acceptance of women at sea (Table 2). These items measure how men felt before becoming members of a mixed-gender crew and how they felt afterwards. Before integration, 42 percent of the men in the entire sample were in favor, 26 percent were undecided, and 32 percent were against; compared to 43, 18, and 39 percent respectively after integration. Thus, it appears that some of the undecided group had shifted to the negative end of the continuum. The explanation is less simplistic, however. In the pay-grade analysis, the E-1--E-3, E-7--E-9, and officer groups gained more percentage points in the "favor" column than in the "against" column. Petty officers (E-4--E-6), who represent over half of the male sample and had the lowest endorsement percentage to begin with, showed a negative shift. In the department analysis, those in deck and medical/dental showed a positive shift; those in aviation and communications, the only two departments in which half of the men were against women before they arrived, showed a strong negative shift. The ship analysis also demonstrated differences. The crews of Ships #1 through 3 were more in favor of women after than before integration and those in ships #4 through 8 were less in favor.

Adjustment--Factor 8. Scores on the adjustment factor reflect women's feelings about sea duty. Figure 8, which presents the distribution of mean scores, shows that women officers were the most positive of any group about life aboard ship. Although CPOs also appear to be very positive, their numbers were quite small ($N=5$), making a finding of significance difficult. In the departmental analysis, women in operations were most positive; and those in engineering and aviation, most negative. Ship responses were also mixed, although only women in Ship #6 felt that sea duty was worse than they had expected. Table 17, which presents the results of the ANOVAs, shows that all variables except deployment yielded significant F ratios.

Women in the Pacific Fleet were positive about their tours while those in the Atlantic were negative. Due to the disparity between deploying and nondeploying women in the Atlantic Fleet versus the almost identical scores in the Pacific Fleet, a significant interaction was obtained. As with men in the Atlantic, deploying women were significantly more positive than were nondeploying women.

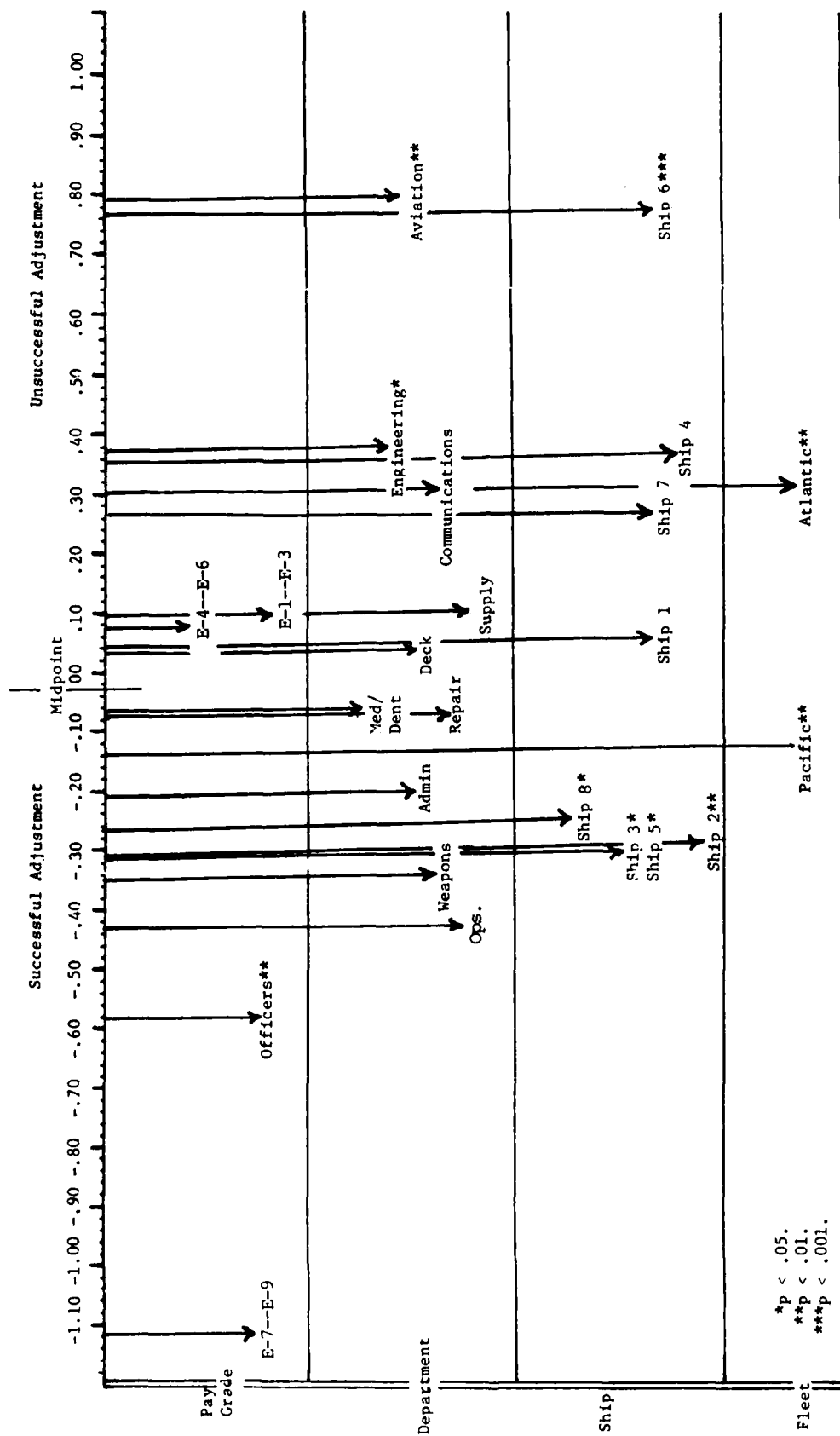


Figure 8. Distribution of mean scores on the adjustment factor for those variables yielding a significant within-group difference in the ANOVAs. Asterisks show groups with scores that deviate significantly from neutrality.

Table 17

Results of ANOVAs Performed on the Adjustment Factor

Source of Variance	Sum of Squares	Degrees of Freedom	Mean Square	F	p
One-way Analyses:					
Pay grade	14.149	3	4.717	4.973	.002
Residual	284.496	300	.948		
Department	20.324	9	2.258	2.334	.015
Residual	285.387	295	.967		
Ship	50.053	7	7.151	8.363	.000
Residual	264.203	309	.855		
Three-way Analysis:					
Fleet	5.767	1	5.767	6.304	.013
Deployment status	0.965	1	0.965	1.055	.305
Workshop effectiveness	8.344	3	2.781	3.040	.029
Interactions					
Fleet x deployment	14.236	1	14.236	15.561	.000
Fleet x workshop	0.740	3	0.247	0.270	.847
Deployment x workshop	1.939	3	0.646	0.706	.549
3-way	0.721	3	0.240	0.263	.852
Residual	263.485	288	0.915		

Women who had attended a workshop that they rated as good were less apt to feel sea duty was worse than they had expected than were those who felt they had attended a poor workshop (31 vs 55%). Also, those who had contact with the ship prior to reporting aboard were more apt to report that sea duty was like or better than their expectations than were those who had no contact (65 vs 50%). Further support for the workshops and ship visit was gleaned from an open-ended question that was worded, "How could you have been better prepared for sea duty?" Many of those who had not attended a workshop said they wish they had been able to do so. They felt being "told the truth" about shipboard life--the lack of privacy, small spaces, and harsh work schedule--would have given them more realistic expectations. These respondents looked upon women "who had been there" as legitimate sources of information that ought to be used in preparing women for sea duty.

Workshop Support--Factor 2. This factor consists of four items: three addressing the establishment and continuation of leadership and team support resulting from the Women at Sea workshop and one concerning visiting the ship prior to integration (Table 2). Fifty-two percent of the women responding to the survey had attended a preparatory workshop. Most of those who had not were not in the initial complement of women to integrate the ships.

Responses to these items indicate that the majority of women felt definite leaders had emerged during the workshop and that these leaders tended to retain their role on board the ship. Just over half of the women spent some time on the ship before actually reporting aboard. A product-moment correlation was performed between this item (a continuous variable) and the adjustment factor, which measured attitudes toward sea duty. A moderate correlation of .19 ($p < .002$) was found, indicating that such contact was beneficial.

Summary of Effects of Organizational Variables on Factor Scores

While it was necessary to discuss the results of the ANOVAs performed on the factors individually, presenting the data in this manner obscures the common threads running through the results. For this reason, Table 18 was prepared, which provides subsets of the independent variables where men and women expressed the most diverse opinion by pay grade, department, ship, and fleet. Deployment is not included because it failed to explain a significant amount of the variance in any of the factors. These subsets were determined by applying Duncan's multiple-range test, setting the alpha level at .05 (Nie et al., 1975). Groups within a subset do not differ significantly from each other but are significantly different from the groups in the other subset. Discrepant subsets may exist even when the ANOVA is not significant.

As shown in Table 18, men differed significantly on seven factors. For purposes of this discussion, the top subset in the pair of response categories associated with each factor may be considered the positive pole. This group experienced the fewest problems; reported the least preferential treatment of women; were the most positive about working together, their feeling for crew members, and the impact of integration; held contemporary beliefs about women's work role; and endorsed having women aboard their ship. The bottom subset, by contrast, is the least positive. The results indicate that CPOs and commissioned officers were in the top subset on all factors (except factor 5), as were men in the Pacific Fleet. Men in the administration and medical/dental departments had the most positive attitudes, followed closely by those in repair, weapons, and supply. The three most positive ships, in descending order, were ships #1, 2, and 3. By contrast, men in pay grades E-4--E-6, the aviation department, ship #6, and the Atlantic Fleet were in the bottom or least positive subset on all factors. In addition, those in the communications department were members of this group for five of the seven factors.

The results for women are much less definitive, since the multiple-range test for some of the independent variables yielded a single subset. The treatment factor is not included in this discussion because, from a woman's viewpoint, some favoritism may be desirable. As shown, women in the Pacific Fleet were consistently more positive than were those in the Atlantic Fleet, as were officers, women in the operations department, and those aboard ships #2, 3, and 8. Women in the aviation department were the least positive on all factors. Also, nonrated women and those aboard ships #6 and 4 tended to be at the negative end of the distribution of the factor scores. The consistencies between

Table 18
Summary of ANOVAs of Factors where Respondents Expressed
the Most Diverse Opinions

		Groups Differing Significantly from Each Other				
Factor	Response Category	Pay grade	Department	Ship	Fleet	
Men						
1.	Problems	Few	E-7--E-9s Officers	Administration, repair, engineering, medical/dental, operations, weapons	1, 2, 3, 4, 5, 7	Pacific
		Some	E-1--E-6s	Deck, aviation	6, 8	Atlantic
2.	Treatment	Least Favoritism	E-7--E-9s Officers	Medical/dental, engineering, operations, repair, navigation, administration, supply, deck	1, 2, 4	Pacific
		Most Favoritism	E-1--E-6s	Aviation, communication	6, 8	Atlantic
3.	Working Together	Most Positive	E-7--E-9s Officers	Engineering, weapons, supply, repair, administration, medical/dental	1, 2, 3, 5, 7	Pacific
		Least Positive	E-1--E-6s	Aviation, navigation, communications	6	Atlantic
4.	Affect	Most Positive	E-7--E-9s Officers	Administration, medical/dental	1	Pacific
		Least Positive	E-1--E-6s	Aviation, weapons, communications, engineering	6	Atlantic
5.	Impact	Positive	E-7--E-9s, E-1--E-3s	Supply	1, 3	Pacific
		Negative	E-1--E-6s	Aviation, communications, operations	6, 8	Atlantic
6.	Traditionality	Contemporary	E-7--E-9s Officers	Medical/dental, administration, weapons	2	Pacific
		Traditional	E-1--E-6s	Aviation, communications, deck, engineering	6	Atlantic
7.	Endorsement	Favor	E-1--E-3s E-7--E-9s Officers	Administration, deck, supply, repair, medical/dental, weapons	1, 2, 3	Pacific
		Reject	E-4--E-6s	Aviation, Communications	6	Atlantic
Women						
1.	Problems	Few	Officers E-1--E-3s	Operations, weapons Aviation, communication, engineering	1, 2, 3, 5, 7, 8	Pacific
		Some	E-4--E-6s	Deck	4, 6	Atlantic
2.	Treatment	Least Favoritism	--	Engineering	4	--
		Most Favoritism	--	Aviation, medical/dental, repair	1, 2, 3, 5, 6, 7, 8	--
3.	Working Together	Most Positive	E-4--E-6s Officers	Operations	2	Pacific
		Least Positive	E-1--E-3s	Aviation	4, 6	Atlantic
4.	Affect	Most Positive	--	--	3	Pacific
		Least Positive	--	--	4	Atlantic
5.	Adjustment	Successful	E-7--E-9s Officers	Operations	2, 3, 5, 8	Pacific
		Unsuccessful	E-1--E-3s E-4--E-6s	Aviation	6	Atlantic

the men's and women's results are also of interest. In both cases, those who are officers, in ships #2 and 3, and in the Pacific Fleet were the most positive; while those in the aviation department, ship #6, and the Atlantic Fleet were the least positive.

Effect of Other Variables on Factor Scores

The relationship between personnel variables and the factor scores was investigated for two reasons. First, the information would indicate to management whether resistance to women in ships would be increased or decreased as older personnel retire and younger ones enter. Second, by identifying the characteristics of those who are or are not supportive of mixed-gender crews, it becomes possible to target groups of personnel rather than include all of them in preparatory or intervention workshops. With these uses in mind, the independent variables entered into the ANOVAs were age, education, marital status, length of time in the Navy, and reenlistment intention. The results are summarized in Table 19 and discussed below:

1. Age. Age was significantly related to five of the eight factors on which ANOVAs were performed. Not surprisingly, younger personnel of both genders reported more problems aboard ship. Men between the ages of 20 and 29 were the least positive of any group on the treatment and working together factors; moreover, they were the only age group who felt the assignment of women was having a negative impact on the ship and its crew. The relationship between age and traditionality was generally linear, with maturity associated with a more contemporary attitude toward women's roles (except for those over 40). For the treatment factor, the one-way ANOVAs of women's responses revealed that those 30 and over felt discriminated against. For the working together factor, the relationship was linear, with the younger women perceiving the least satisfactory cross-sex interactions.

2. Education. The education effect found for problems was due primarily to the responses of women; those with the most schooling experienced the fewest problems aboard ship. The one-way ANOVA of men's responses failed to yield a significant main effect. Men's perceptions of discrimination/favoritism (treatment) were affected by their level of education, but women's were not. College graduates saw the least amount of favoritism in the treatment of women, while those with 8 to 15 years of education responded similarly. In regard to impact, college graduates felt women had had a positive impact on the ship; those with some college, that the outcome had been negative; and the responses of the remaining two groups were in between. The effect of education on traditionalism was linear--the more education, the more contemporary the view. Adjustment also was linearly related to education, with female college graduates expressing the most positive attitudes.

3. Marital Status. This variable had a differential effect on men's and women's scores on problems (interaction $F = 18.076, p < .000$). Married women encountered more problems aboard ship than did single women, while a reverse pattern was found for men. Although the scores of both married and single men on traditionalism indicated that they held traditional views of women's work roles, the latter group was more emphatic than the former. On endorsement, single men endorsed having women in the crew, whereas married ones were neutral. The means on adjustment indicated that women's liking for their shipboard assignment was strongly affected by their marital status; those who were single were favorable, while those who were married or cohabitating wanted to be on shore duty.

4. Time in the Navy. This variable was highly related to all of the factors. Generally speaking, women at each level were experiencing more problems than were men, although there was no gender difference among career personnel. The group that reported the most problems was women with 1-2 years of service. A significant interaction between gender and tenure was obtained for this factor ($p < .000$). In responding to treatment items, men with less than 1 year of service perceived the least preferential treatment of women; the scores of all others showed little dispersion. On working together, personnel who had been in the Navy for more than 10 years or less than 1 year, regardless of gender, felt the most positive about the male/female working relationships aboard ship. A significant interaction was obtained in the ANOVA ($p < .025$), probably due to the less positive scores of men with 2-5 years of service--a very positive group among women. The significant effect on affect resulted from the responses of men, since the one-way ANOVA for women failed to achieve significance. While all males scored in the "liking" area, those who had been in the Navy from 2-10 years were the least positive; and those with less than 1 year or over 10 years, the most positive. On impact, men with 2-10 years of service perceived a negative impact; the remainder saw no change. All of the men held traditional views of women's work role except those with the longest tenure, who were neutral. Tenure tended to be linearly related to the endorsement factor, except for those with 5-10 years of service. Men having the shortest association with the Navy were the most enthusiastic about women at sea. Women with the longest and shortest amount of time in the Navy appear to have made the best adjustment, while those with from 1-2 years of service were having more difficulty (the rest were neutral).

5. Reenlistment Intention. This variable was also highly related to all of the factors. Not surprising, career personnel reported the fewest problems aboard ship; and those who would reenlist only if guaranteed shore duty, the most. The significant interaction between gender and intent probably resulted from the relatively problem-free responses of men who were undecided about reenlisting. Treatment and retention were linearly related: Men who were reenlisting perceived the least preferential treatment of women. The one-way ANOVA of women's responses was not significant. On working together, career women and those planning to reenlist held the most positive views of interpersonal relations on the job; women who would only reenlist if guaranteed shore duty held the least positive. Men's scores were not as sharply differentiated, although they yielded a significant main effect in the one-way ANOVA. The interaction effect between gender and intent was also significant for working together ($p < .000$). Career intent was linearly related to affect, with those who were not reenlisting expressing the least liking for their co-workers and supervisors. On impact, the only group that saw women as impacting negatively on the ship were men who were definite about not reenlisting (35% of all men; 47% of first-termers). The undecided group saw a positive impact; all others noted no change. The traditionality factor was linearly related to intention, with those not reenlisting holding the least egalitarian view. On endorsement, men who were undecided about remaining in the Navy endorsed women aboard ship, those who were reenlisting were neutral, and those who were severing their association with the Navy did not like mixed-gender crews. The pattern for the last factor again indicated that women who would reenlist only if guaranteed shore duty were having the most difficult time adjusting.

Table 19

Summary of One-way ANOVAs of Factor Scores to
Investigate the Effect of Personnel Variables

Factor	Significance of Main Effect				
	Age	Education	Marital Status	Time in Navy	Reenlistment Intent
1. Problems ^a	.000	.000	.000	.000	.000
2. Treatment ^a	.000	.006	NS	.000	.000
3. Working together ^a	.030	NS	NS	.000	.000
4. Affect ^a	NS	NS	NS	.000	.000
5. Impact ^b	.000	.006	NS	.000	.000
6. Traditionalism ^b	.000	.000	.014	.000	.000
7. Endorsement ^b	NS	NS	.000	.000	.000
8. Adjustment ^b	NS	.016	.000	.005	.000

^aBased on two-way ANOVA using gender as the other variable.

^bBased on one-way ANOVA since factor is unique to men's or women's survey.

Because age and tenure are interrelated and also exert a confounding influence upon pay grade, a multiple-regression analysis was performed to try to sort the variance in the factor scores. The results indicate that pay grade has a stronger relationship to five of the seven factors (problems, discrimination, assimilation, affect, and traditionalism) than do either age or tenure. For the impact and endorsement factors, tenure accounted for more of the variance in the responses than did the other two variables. In the partial correlations, controlling for the effects of tenure and pay grade, age never achieved a correlation coefficient greater than .085.

Interpersonal Relationships

Additional items in the survey addressed social interactions on and off the ship, the effect of integration on established same-sex and cross-sex relationships, and sexual harassment. All of these items were not presented to both men and women. Responses are discussed below.

1. Friendship and Dating. Men were asked if the addition of women had affected the amount of time shipmates spent together off the ship. Over three-fourths stated that it had not. Moreover, one-third of the men in ships #2 and 4 felt that the crew was spending more free time together than they did before the women came aboard. Fifteen percent of the single men were regularly dating a woman in the crew and 38 percent stated they would like to be. Obviously, with most of the ships having fewer than 100 women aboard, there were not enough to satisfy this desire. For this reason, jealousy appears to have arisen among the men, particularly in ship #4. Despite this problem, 86 percent of the respondents indicated that having women in the crew had not affected male friendships.

2. Effect on Primary Relationship. In responding to the preintegration survey, 60 percent of the men expressed the opinion that having women aboard ship would cause conflict with the wives and girl friends of men in the crew (Greebler et al., 1982). However, when asked if they expected problems with their spouse or girl friend, only 18 percent said, "yes." The question of whether integration had adversely affected the primary opposite-sex relationship in one's life was included in both the men's and women's versions of the postintegration survey. Twenty percent of the men indicated that they had experienced conflict with their mate, versus 26 percent of the women. Thus, predictions were remarkably close to after-the-fact judgments of male respondents; the numbers were far lower than many had feared.

3. Crew's Relationships with Other Males. Two questions in the men's survey probed their reactions to comments about integration and to aggression directed toward a female crew member. The results indicate that most of the comments from outsiders were positive. When negative comments were made, however, men were not disturbed by them. Sixteen percent of the men (N=397) had defended or protected a woman in the crew. Just under half of these respondents indicated that another man aboard the ship was the aggressor, while the remainder stated that other Navy men were involved. More of the men in ship #4 (23%) than in any other ship said they had to protect a woman from fellow crew members. Of the men who had never had to play the chivalrous role, 88 percent stated they would do so if the necessity arose.

4. Sexual Harassment. For the purpose of this investigation, harassment was defined as "unwanted or unwelcomed words or actions of a sexual nature." The respondents were asked to indicate whether the harasser was a peer/subordinate or superior in their crew or from some other Navy command. Also, the behavior of the women after harassment occurred, whether a complaint had been made, and how it had been resolved were explored.

Although verbal abuse was the most prevalent complaint, it was seldom reported to higher authority, primarily because the women felt they could handle the situation satisfactorily. Of the incidents that led to a formal complaint, about one-fourth resulted in disciplinary action being taken. Verbal abuse was equally apt to originate from a crew member as from a man in another command, but much less likely to come from a superior.

Although physical harassment by a superior was uncommon, it was experienced by about a third of the women from peers/subordinates. Again, very few of the incidents were reported. Approximately two-thirds of the "grabbing" and "pinching" were perpetrated by a crew member, rather than by a Navy man from another command. Incidents of attempted or actual rape were rare (3%) as was sexual harassment from other women (7%).

Most harassment occurring aboard ship was being dealt with by the victims. For the most part, the women's responses indicate that the incidents were not serious. Less than 5 percent of the sample failed to file a complaint because of fear or lack of familiarity with the appropriate procedure.

Effects of Deployment on Shipboard Aspects

Three ships deployed (two to the Indian Ocean and one to the Mediterranean) before the postintegration survey was administered. Respondents on these ships were asked to respond to 18 extra items designed to assess whether aspects of shipboard functioning were more or less of a problem while at sea and in foreign ports.

Table 20, which presents the results, show that the majority of women felt over half of the shipboard aspects listed were more of a problem at sea, whereas the majority of men believed they were the same. Five aspects were cited by both genders as being aggravated by sea duty: Lack of privacy, getting needed supplies, jealousy among men over women, boredom, and heavy workloads/long duty hours. The only aspect that seems to have improved (according to half of the women and one-third of the men) was team efforts among the crew.

One-way ANOVAs were performed on these items for men and women separately to investigate whether differences among ships existed. The women's analyses yielded only two significant main effects, indicating that those in ship #8 experienced few problems performing their general military duties and perceived the greatest amount of team cohesiveness. A significant effect for ship was found in male responses for 11 of the aspects. Men on ship #5 reported the least problems, whereas those in ship #7 felt that many facets of the shipboard environment were more difficult to deal with during the deployment than when in CONUS.

Observations

Data obtained through participant/observer reports and debriefing tapes were analyzed and results organized into topical areas paralleling the factors emerging from the three factors analyses performed on survey items.⁷ Results for six of these factors are presented below. The remaining three factors--traditionalism, endorsement, and workshop support--had no behavioral manifestations during the limited time the observers were with the crews.

The following paragraphs must be interpreted with caution. The scenes and interactions observed could have been isolated incidents. Moreover, the observers, who were associated with the project for only 2 weeks, may have unconsciously biased their perceptions toward what they thought the investigators wanted to hear or to be consistent with their own beliefs about women aboard ships. The reader should also keep in mind that what was seen may have been at odds with Navy or command policy.

1. Problems. Five primary problem areas were noted.

a. Berthing. It appeared that the berthing arrangements aboard ship were creating difficulties because women had to be billeted together rather than with their divisions. Usually, one woman was made responsible for compartment cleaning detail. She made work assignments, but the division officer granted leave. Conflict arose when women failed to perform their cleaning duties and the division officer did not honor the disciplinary chits that were subsequently forwarded. For men, the same individual is responsible for both assigning work and granting leave.

⁷Unfortunately, no observers had been assigned to ship #6. Thus, there are no amplifying data to help explain the generally negative attitudes existing among that crew.

Table 20
Women's and Men's Responses to Deployment Items

Shipboard Aspect	Response					
	More of a Problem During Deployment		No Difference		Less of a Problem During Deployment	
	Women (%)	Men (%)	Women (%)	Men (%)	Women (%)	Men (%)
Performing your job	48	40	28	49	24	11
Performing general Military duties	43	31	38	58	18	10
Lack of privacy	91	68	9	29	0	3
Access to chain of command	14	14	60	73	26	13
Team efforts among crew members	24	22	29	44	47	34
Discipline aboard ship	38	37	38	44	25	19
Getting supplies	58	50	33	45	8	5
Not being allowed to show affection	53	44	42	51	6	5
Jealousy among men over women	47	53	47	45	7	3
Feeling comfortable going to sick call	19	19	70	76	11	5
Boredom	63	53	28	37	9	11
Heavy workloads/ long duty hours	67	64	20	26	12	10
Favoritism shown towards women	14	44	78	53	8	3
Discrimination against women	23	15	68	74	9	11
Sexual harassment from male crew	48	36	46	59	6	5
Sexual harassment from non-crew members	51	37	44	54	5	9
Personal safety on base in foreign ports	49	29	45	66	6	5
Personal safety off base in foreign ports	55	37	38	58	6	5

b. Profanity. The observers' reports about women's responses to profanity were mixed. Some thought the language aboard ship had been cleaned up and others noted that some enlisted women (but not officers) used the same salty language as did men. The fact that other women did not like profanity was mentioned, including an incident involving a chief storekeeper who would not tolerate profane language among her subordinates. One observer reported that, whenever a woman entered the first class lounge, the level of profanity and crude talk increased markedly. He interpreted this behavior as using profanity as an instrument of male identity and creating a barrier to women's entry into the group.

c. Publicity. Publicity was viewed as a problem by both observers and the crew. One of the first ships to deploy with women had participant observers aboard on the homeward leg of the voyage. The general feeling among the crew was that the deployment had been for publicity purposes. People on the ship were tired of the attention--the visitors, film crews, and representatives of the news media. Women reportedly went out of their way to avoid being seen by these outsiders while performing some nontraditional task.

d. Pregnancy. Pregnancy was seen as a problem by the observers because men viewed Navy policy as inequitable; that is, they believed pregnancy was used as a means of getting assigned to shore duty. The women, in turn, felt that allowing them to remain aboard ship for only a short time after their pregnancy was diagnosed was an unreasonably short period. Some of the COs expressed irritation at what they viewed as an unreasonable percentage of the women in the crew becoming pregnant; others felt the numbers were manageable and no more than anticipated. Probably both attitudes were justifiable since the pregnancy rate varied from ship to ship.

e. Proving Oneself. The participant/observers reported that women felt that they had to prove themselves by working harder than men. They were observed working very long hours or tackling physically demanding tasks, trying to show they could do the job.

2. Treatment. Recorded incidents of differential treatment were often interpreted as favoritism by one observer and negative discrimination by another. For example, a male CPO viewed the nightly watches posted in the women's berthing area as overprotection (discrimination), while another male observer saw it as favoritism. The same "eye of the beholder" phenomenon was apparent in the area of job assignments. One observer (male) viewed an action or procedure as underutilization of women's talents and skills, while another saw it as preferential treatment. The following summary of observations of treatment applies to the recorded data but may not be typical:

a. Women were restricted from opening portholes aboard one ship, while men were not. {Note: The observer thought protection of privacy was the issue.}

b. Women on the wake-up list for watch would not be awakened unless another woman was available to rouse them. Male observers viewed this policy as interfering with job effectiveness.

c. Women officers boarding a nonintegrated ship for training had to go in pairs. TAD orders to combatant ships were difficult to arrange, making it hard for women to obtain their qualifications.

d. Women were overrepresented among those on mess duty in the wardroom. {Note: Although the authors were told that the prettier women were sent to the officers' mess, no such distinction could be made in the ships visited.}

e. Women officers' primary duty assignments sometimes were collateral duties for male unrestricted line officers.

f. Women did not perform heavy work as frequently as men did.

g. Women tended to make a big fuss over small injuries and seemed to be sent to sick bay with greater leniency than men. When seasickness struck, it was reported that men were told to find a bucket and women were sent to lie down.

h. Women received extras--more coveralls, better berthing compartments,⁸ permission to wear earrings.

i. Women received more attention than did men when they had a problem.

j. Women were not disciplined in the same manner as were men or as frequently, especially for displays of affection. The rationale for differential punishment in such cases was that the male outranked the female and, therefore, was more responsible for the misbehavior. With other types of offenses, an observer wrote, "Chiefs and POs have a tendency to chew out the male goofoffs and let the female ones escape." Some ships had no brig facilities for women. This meant that they were sometimes let off with a lesser punishment; at other times, they were consigned to a federal prison for a short period.

3. Working Together. All incidents associated with teamwork were positive. Women were seen helping each other when the task required more strength, height, or weight. Men also helped women in such situations, carrying heavy objects up ladders and helping them disembark when their arms were full of objects.

Behavior described as "goofing-off" was interpreted differently. Some observers viewed mixed-gender horseplay as indicative of successful integration and good for morale. Others interpreted talking and joking as a sign of poor supervision and detrimental to productivity.

Cross-sex supervision occasionally was a problem for leaders of both genders. Females in authority were bypassed by male subordinates, who preferred to deal with men. Males were heard expressing resentment toward women officers because they "hated taking orders from a woman" and didn't like working for women who had less experience aboard ship than they did. The observers felt that women needed more training in leadership because they lacked the "snap and vigor" displayed by men when giving an order. For the most part, however, the observers stated that women in leadership roles performed effectively and men and women showed mutual respect in the subordinate/supervisor relationship.

4. Affect. Men and women got along well together and enjoyed each other's company--sometimes too much. Occasionally, people were seen spending more time

⁸In rehabilitating the ships prior to integration, every reasonable effort was made to provide women with berthing facilities identical to those of men.

talking than working. Observed public displays of affection (PDAs) (noted on all ships) ranged from a man and woman brushing hands across the top of shelving in the ship's store to being in the bunk together. Defining PDA was a problem, since a certain amount of physical contact is normal among crew members. Moreover, counseling behind closed doors that involved people of the opposite sex aroused suspicion and comment. The observers reported that PDA regulations were enforced and those caught violating them were disciplined.

Men viewed sexuality as an area where women had an unfair advantage. They were afraid women would capitalize on the fact that men have sexual needs. Women seemed to have their problems too, protesting that some supervisors treated them preferentially in hopes of gaining sexual favors. Sexual harassment was observed on two ships in the form of men pressuring women; in one instance, a man threatened physical retaliation for a slight. The women in the crew of a ship preparing for a deployment worried about staying away from the men who had been pursuing them.

3. Impact. Of the 44 observations focusing on women's effectiveness aboard ship, 38 were positive, 2 were neutral, and 4 were negative. Women were seen carrying as many cases of supplies as men, handling lines knowledgeably, overhauling a pump with above average performance, navigating through stormy seas, accurately charting a course, and being more conscientious in performing a task than were their male peers. Several observers mentioned that hard-working women seemed to inspire male coworkers, who didn't want to be outdone. Communications aboard ship had been upgraded, in the opinion of one CO, because women were more reliable, making sure that messages reached the right person. Negative observations of women's performance included their inability to pick up a CO₂ bottle or a hose and two accidents that resulted from women dropping heavy objects. The area of damage control appeared to pose the greatest amount of difficulty. Women had trouble getting an airtight seal in their masks, handling equipment, and reportedly were less attentive and responsible than men. However, women were seen as productive, even those who appeared to be having difficulties. Some earned high praise from the observers.

Morale was almost unanimously viewed as improved aboard the integrated ships. The CO of one ship mentioned that the crew was happier than before because the women were cheerful and their smiles contagious. He also felt women were more responsive to counseling than were men and easier to motivate, and that they rarely acted out their aggressions. The observers noted that women tended to be more concerned about their personal appearance and military dress, more helpful in areas where service is rendered (mess decks, ship's store, etc.), and more friendly in chow line than were men. In addition, they reported conversations held with crew members indicated that morale was on an upswing.

6. Adjustment. The observers felt that most women had adjusted well to shipboard life. They observed them in all types of work-related activities, in off-duty hours aboard ship, during rough weather on a deployment, and on liberty with the crew. The general feeling expressed was that one soon ceased to be aware of being in a mixed-gender situation because women blended in so well in the work spaces.

It appeared that women CPOs were experiencing isolation; they seldom socialized with men in the chiefs' lounge or with female superiors or subordinates. They were few in number, generally older than the other women, more frequently married, and

berthed in separate quarters. Thus, due to their lack of interest in young adult or older male activities, they tended to be loners. There was no indication, however, that they were not adjusting to life aboard ship.

DISCUSSION

The results of the analysis of responses to the postintegration survey highlighted differences among groups in respect to attitudes toward and experiences aboard a mixed-gender ship. Some of these differences represented a solidification of opinions expressed before women reported aboard the ships. Prior to integration, men in the aviation department were the most pessimistic of any department about the potential impact of women on the ship's functioning and the adverse consequences to them as individuals. This analysis showed that men in the aviation department were the least positive on every factor. Over half said they had been against women in ships prior to integration and even more were against it 1 year later. Men in ship #6 were the least positive of any crew on both the pre- and postintegration surveys. Their attitudes, which may have been vocalized or manifested in behavioral ways, seem to have affected the adjustment and morale of the women. While no difference had been found in the predispositions of the women prior to reporting to the ships, a significant difference existed later. Not surprisingly, women in ship #6 and in the aviation department were much less favorable about being assigned to sea duty than were those in other ships and departments.

It is, perhaps, remarkable that feelings were not more negative. On many of the factors, the least optimal group mean did not reflect a negative attitude but, rather, a significantly less positive or neutral stance. Thus, the differences being discussed are often a matter of degree, rather than substance. What is not obvious from the survey is that men had many reasons to be against integration. Since the ships to which women may be assigned are noncombatants, they are considered desirable sea duty. Many men assigned to these ships have limited duty designators and are not on a deploying ship for humanitarian reasons; that is, because of family illness or responsibilities, they are serving on a ship that seldom strays far from the home port. Thus, the decision to assign women to these ships means that fewer such billets can be filled by men. Other factors that could have caused men to resent integration were the amount of publicity focused on the women (to the exclusion of men), the necessary changes made to the ships to accommodate women, the repeated emphasis upon making integration work, the competition posed by the conscientious woman, the new policies and regulations that were devised, and the new work roles that had to be learned. Considering all possible sources of irritation, the number of men who said they were in favor of integration is surprising.

When plans were being made to assign women to ships, it was predicted that CPOs, as guardians of tradition and committed to a naval career, would be very resistant to integration. Instead, this study demonstrated that CPOs were more positive than any group about the impact of women on the ship and its crew. Most ships in the sample were undermanned and women proved to be willing workers. Since getting the job done is the major concern of CPOs, they learned new ways of interacting with subordinates and accepted integration. Petty officers, on the other hand, appear to need help in coping with the change. They alone expressed predominately negative views of the impact of women on discipline, leadership, and supervision and were against having women in the crew. Petty officers are the first-line supervisors of the majority of women assigned to ships and, as such, have to deal directly with work group level problems as they arise. Moreover, they are the least experienced supervisors in the chain of command. Perhaps

their negative views reflect the demands placed on the leadership/supervisory skills of a novice rather than the actual impact of women on ship aspects. Nonrated men strongly endorsed a mixed-gender crew, even though they were undecided about how the changes had affected them. Nonrated men also held the most traditional beliefs about women's work role, suggesting that there is very little relationship between such beliefs and the acceptance of women as crew members.

The fact that men in the Pacific Fleet were consistently more positive than were those in the Atlantic could be due to the sequence of events: Two of the three Atlantic Fleet ships were the first to integrate and undoubtedly had to create rules to fit unique situations and bear the brunt of public curiosity. Men in Pacific Fleet ships, however, had to deal with the criticism generated by pictures of several scantily clad crewmembers in Playboy (1980) and the highly publicized investigation of lesbianism. Thus, it would seem that publicity per se does not explain the fleet differences, although certain types of publicity might have caused resentment.

The workshops provided by the Human Resource Management Centers/Detachments (HRMC/D) to prepare both men and women for integration had a positive impact when the participants judged the workshop as being well presented. Attending a workshop judged as poor usually had a greater negative effect than did attending no workshop at all. Women who evaluated their workshop preparation positively experienced the fewest problems, liked other crew members the most, and had adjusted well to duty in ships. Men who judged their workshop preparation as positive endorsed integration, felt women were having a positive impact on the ship, judged the treatment of women as being more equitable than did other men, and felt the two genders worked well together. These findings appear to justify the expenditure of funds to develop the Women at Sea workshop, train those giving the workshop, and gather the participants in one location if the material and trainers were good. Since there was little if any standardization or coordination among the different HRMC/Ds, it is not surprising that some workshops were better than others. It should be noted that the respondents' perceptions of the workshop were measured on the postintegration survey and may have been colored by intervening experiences in a mixed-gender crew. While this possibility cannot be ruled out, there was no relationship between attitudes toward serving aboard these ships prior to integration and judgment of the workshops. Thus, good workshops seem to have had the desired effect.

The effect of the individual variables upon responses was weak. Only tenure and reenlistment intention were consistently related with the factor scores, although much of the variance in the former was due to pay grade. Men who definitely planned to reenlist were neutral about women at sea and those who were undecided endorsed women aboard their ship. Moreover, the proportion of men in their first enlistment who stated they planned to leave the Navy was no greater than the percentages reported in other studies of men ashore and in nonintegrated ships (Farkas, 1981; Thomas, 1980).⁹ Thus, integration does not appear to be turning men away from the Navy.

Despite the importance of determining whether integration is workable, it would be unconscionable to ignore the stress on the individuals involved. Women were the outsiders, ordered into a constrained environment in which they were vastly outnumbered. As visibly different members of a minority group, they had to bear the brunt of any

⁹Reported as 52 percent and 58 percent respectively, versus 47 percent for men in integrated ships.

resentment the policy change engendered in male personnel. In addition, the shipboard milieu, which has developed over centuries, is totally androcentric, conferring manhood upon those who meet the challenges afloat and on shore liberty. Women had the choice of either blending in or remaining true to their gender. The first option was probably the easiest and was encouraged by regulations designed to ensure equity. Without a doubt, many women adopted this response, for the participant/observers mentioned female profanity equal to male, women CPOs who epitomized the stereotype of Navy chiefs, and the fact that women in work uniforms were almost indistinguishable from men. Moreover, by liking men in the crew more than they liked women, they were identifying with the majority group, a behavioral response also noted by Kanter (1977) among women in a large predominantly male industrial corporation. While such women may have suffered ambiguity, they probably avoided the criticism of using their sexual identity to manipulate the situation, as women who remained feminine were accused of doing.

Responses to the survey provide some clues as to the major problems women experienced. The most prevalent, unique (i.e., different from men at their level) difficulty women reported was with tasks requiring physical strength. This also was the area in which men and women agreed that the greatest amount of differential treatment was occurring. Thus, superiors were taking into consideration the lesser physical capabilities of women when assigning jobs. Over half of the women, as compared to a significantly smaller proportion of men, also had difficulty with crowded quarters/lack of privacy, the profanity of others, and having to prove themselves. Since the latter area was also a major concern of women officers, a period of testing was probably occurring aboard the ships. If women responded as individuals in a new situation, testing should have provoked no more stress than is usual in such circumstances; if they responded as symbols of their gender, however, the personal cost could have been greater. Over half of the women also experienced problems with men's behavior toward them. The primary difficulty was verbal abuse, described as harassment, spreading of rumors, and excessive profanity, followed by lack of acceptance and resentment. It is of interest that profanity was viewed as reactive to women, an interpretation also made by the participant/observers.

Men enjoyed numerical dominance over women and, for the most part, did not have to adapt to an alien environment. Because of pressure, real or perceived, to successfully absorb women into the crew and the glare of publicity, however, the workplace was stressful. Moreover, there was reason to feel discriminated against--a novel situation for a white male. Men saw women as being treated with greater leniency in disciplinary matters. They felt nonrated women were getting more than their share of the easier assignments--to the officers' wardroom, the ship's store, and the personnel office. Supervisors had to cope with tears, menstrual cramps, and "public displays of affection," probably for the first time in their naval experience. They feared the sexual advantage women were presumed to possess and resented the fact that pregnant women were transferred to shore duty. In several departments, they had to work harder than before women came aboard. Not surprisingly, many of these men failed to endorse integration, although some undoubtedly were predisposed to reject women and were not inclined to change.

Despite the problems and accommodations that had to be made, the crews appeared to be functioning as units. Men and women liked each other and CPOs felt that morale improved after women came aboard. Moreover, those ships that deployed experienced an increase in team cohesiveness. Incidents of sexual harassment were primarily verbal and no more numerous than ashore. Stress on marital relationships was much lower than anticipated.

The initial phase of any major social change is turbulent as redefinition and testing occur. If the purpose for the change is met and the majority of the participants accept the new roles and rules accorded them, success usually follows. The observers were struck by the naturalness of the mixed-gender environment, testifying to the degree of adaptation that had occurred. By integrating noncombatant ships, Navy management was attempting to improve manning levels of the inadequately manned fleets. Military women historically have been used to free men for the primary function of defending the nation. To the extent that, to date, approximately 3,000 more men now than before integration are available for assignment to combatant ships, the policy change has achieved its goal. Expanding the numbers beyond the planned 5,000 in 1985, however, will depend upon other criteria. Many of the ships in this study now have doubled the number of women aboard as additional space was converted to quarters for female personnel. By so doing, Navy management will be able to judge whether women are interchangeable with men, not only when their numbers are very limited but also when they represent a larger proportion of the crew. In addition to this "learn by doing" approach, research is being performed at NAVPERSRANDCEN to determine what shipboard tasks are most physically demanding and how personnel should be selected for these assignments. Implementation of the results of this research should greatly diminish the problems associated with men having to work harder to compensate for women's smaller physiques and different musculature. In addition, the changing technology of naval warfare places less emphasis upon physical abilities and more on the skills of trained personnel. Since women who enlist usually have more education and score higher on the aptitude tests than do men who enlist, their value increases as the Navy moves toward modernization.

CONCLUSIONS

The following conclusions are, of necessity, based on subjective data since objective measures of the outcome of change were not available.

1. Women perform at least as well as do men aboard ships, except in some physically demanding jobs. This conclusion is based on interviews with supervisors and commanding officers, observations, and survey responses indicating that women had not proven to be a detriment to the efficiency of the ship.
2. Women have been integrated into the crews to a greater extent, according to the participant/observers, than in shore stations. The relatively low incidence of sexual harassment and universally positive responses to the working together items attest to success in this realm.
3. Being a member of an integrated crew does not influence men to leave the Navy. While actual reenlistment rates are unknown, the reenlistment intentions of the men in the sample were as high as those of Navy men ashore and in other ships.
4. Negative predispositions toward women in ships lead to negative evaluations of the changes that occur. Both the ship and department in which the majority was against integration prior to the fact also had a majority responding negatively after the fact. Positive predispositions were not as clearly related to later attitudes.
5. Deploying in a mixed-gender crew has no effect on attitudes toward integration, adjustment, or perceptions of the outcome.

6. A well-presented Women at Sea workshop promotes acceptance and adaption to serving in an integrated crew.

7. Petty officers, more than men in other pay grades, experience problems in mixed-gender crews.

8. The prognosis for the future is encouraging. Men who had been in the Navy for the shortest period and, for the most part, had never served on sea duty in a male-only crew were strongest in their endorsement of integration. Those who had decided to reenlist felt neutral about women at sea. Since these two groups are integral parts of tomorrow's Navy, their acceptance suggests easier sailing ahead.

RECOMMENDATIONS

1. Until selection criteria based on valid measures of physical abilities are developed for use in assigning nonrated women to sea duty, consideration should be given to instituting a minimum height/weight standard to increase the probability that the majority of women can perform general detail duties.

2. The Women at Sea workshops, as delivered by HRM personnel at Norfolk and San Diego, should be evaluated by the Naval Military Personnel Command (NMPC-6) to determine how their content and participant acceptance differ. As a result of this evaluation, a single workshop should be developed for use by all HRMC/Ds.

3. The basis of the consistently less positive attitudes of petty officers and personnel in the aviation department should be determined. This task could be undertaken by trained consultants at the HRM centers or by means of a follow-on research effort assigned to NAVPERSRANDCEN.

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APPENDIX
FORMS USED BY NAVAL RESERVISTS
TO RECORD OBSERVATIONS

OBSERVER FORM

Observer Initials _____ Ship Code _____ Incident Number _____

Date _____ Time of Incident _____ Gathered 1st _____ or 2nd _____ hand

Setting _____

Usually occurring behavior (norm or standard) _____

Reported Observation/Incident _____

Additional comments (describe related issues or events pertaining to this observation).

How typical was this incident of behaviors you observed?

Very typical 1 2 3 4 5 An isolated incident _____ Don't know _____

Categories: How do you think this incident impacted the following areas?

1. Job Effectiveness -2 -1 0 1 2

3. Morale -2 -1 0 1 2

2. Discipline -2 -1 0 1 2

4. Equal Opportunity -2 -1 0 1 2

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Commander in Chief U.S. Atlantic Fleet
Commander in Chief U.S. Pacific Fleet
Commander Fleet Training Group, Pearl Harbor
Commander Naval Air Force, U.S. Atlantic Fleet
Commander Naval Air Force, U.S. Pacific Fleet
Commander Naval Air Systems Command
Commander Naval Surface Force, U.S. Atlantic Fleet
Commander Naval Surface Force, U.S. Pacific Fleet
Commander Naval Military Personnel Command (NMPC-013C), (NMPC-61), (NMPC-62),
(NMPC-63)
Commander Navy Recruiting Command
Commander Submarine Force, U.S. Atlantic Fleet
Commander Submarine Force, U.S. Pacific Fleet
Commander Training Command, U.S. Atlantic Fleet
Commander Training Command, U.S. Pacific Fleet
Commanding Officer, Naval Aerospace Medical Institute (Library Code 12) (2)
Commanding Officer, Naval Training Equipment Center (Code N-1)
Commanding Officer, USS ACADIA (AD 42)
Commanding Officer, USS AJAX (AR 6)
Commanding Officer, USS BEAUFORT (ATS 2)
Commanding Officer, USS BOLSTER (ARS 38)
Commanding Officer, USS BRUNSWICK (ATS 3)
Commanding Officer, USS CABLE (AS 40)
Commanding Officer, USS CANOPUS (AS 34)
Commanding Officer, USS CAPE COD (AD 43)
Commanding Officer, USS CONSERVER (ARS 39)
Commanding Officer, USS DIXON (AS 37)
Commanding Officer, USS EDENTON (ATS 1)
Commanding Officer, USS FLORIKAN (ASR 9)
Commanding Officer, USS FULTON (AS 11)
Commanding Officer, USS SAMUEL GOMPERS (AD 37)
Commanding Officer, USS HECTOR (AR 7)
Commanding Officer, USS HOIST (ARS 40)
Commanding Officer, USS HOLLAND (AS 32)
Commanding Officer, USS HUNLEY (AS 31)
Commanding Officer, USS JASON (AR 8)
Commanding Officer, USS KITTIWAKE (ASR 13)
Commanding Officer, USS EMORY S. LAND (AS 39)
Commanding Officer, USS LEXINGTON (AVT 16)
Commanding Officer, USS McKEE (AS 41)
Commanding Officer, USS MOCTOBI (ATF 105)
Commanding Officer, USS NORTON SOUND (AVM 1)

Commanding Officer, USS OPPORTUNE (ARS 41)
 Commanding Officer, USS ORION (AS 18)
 Commanding Officer, USS ORTOLAN (ASR 22)
 Commanding Officer, USS PAIUTE (ATF 159)
 Commanding Officer, USS PAPAGO (ATF 160)
 Commanding Officer, USS PETREL (ASR 14)
 Commanding Officer, USS PIGEON (ASR 21)
 Commanding Officer, USS POINT LOMA (AGDS 2)
 Commanding Officer, USS PRAIRIE (AD 15)
 Commanding Officer, USS PRESERVER (ARS 8)
 Commanding Officer, USS PROTEUS (AS 19)
 Commanding Officer, USS PUGET SOUND (AD 38)
 Commanding Officer, USS RECLAIMER (ARS 42)
 Commanding Officer, USS RECOVERY (ARS 43)
 Commanding Officer, USS SHENANDOAH (AD 26)
 Commanding Officer, USS SIERRA (AD 18)
 Commanding Officer, USS SIMON LAKE (AS 33)
 Commanding Officer, USS L. Y. SPEAR (AS 36)
 Commanding Officer, USS SUNBIRD (ASR 15)
 Commanding Officer, USS TAKELMA (ATF 113)
 Commanding Officer, USS VULCAN (AR 5)
 Commanding Officer, USS YELLOWSTONE (AD 41)
 Commanding Officer, USS YOSEMITE (AD 19)
 Commanding Officer, USS AEOLUS (T-ARC 3)
 Commanding Officer, USS APACHE (T-ATF 67)
 Commanding Officer, USS SILAS BENT (T-AGS 26)
 Commanding Officer, USS BOWDITCH (T-AGS 21)
 Commanding Officer, USS CATAWBA (T-ATF 168)
 Commanding Officer, USNS CHAUVENET (T-AGS 29)
 Commanding Officer, USNS DUTTON (T-AGS 22)
 Commanding Officer, USNS HARKNESS (T-AGS 32)
 Commanding Officer, USNS HESS (T-AGS 38)
 Commanding Officer, USNS KANE (T-AGS 27)
 Commanding Officer, USNS KINGSPORT (T-AG 164)
 Commanding Officer, USNS MOHAWK (T-ATF 170)
 Commanding Officer, USNS ALBERT J. MYER (T-ARC 6)
 Commanding Officer, USNS NARRANGANSETT (T-ATF 167)
 Commanding Officer, USNS NAVAJO (T-ATF 169)
 Commanding Officer, USNS NEPTUNE (T-ARC 2)
 Commanding Officer, USNS POWHATAN (T-ATF 166)
 Commanding Officer, USNS SIOUX (T-ATF 171)
 Commanding Officer, USNS VAN GUARD (T-AG 194)
 Commanding Officer, USNS WILKES (T-AGS 33)
 Commanding Officer, USNS WYMAN (T-AGS 34)
 Commanding Officer, USNS ZEUS (T-ARC 7)
 Director, Office of Naval Research Branch Office, Chicago (Coordinator for Psychological Sciences)
 President, Naval War College
 Superintendent, Naval Postgraduate School
 Commander, Army Research Institute for the Behavioral and Social Sciences, Alexandria (PERI-ASL)
 Commander, Air Force Human Resources Laboratory, Brooks Air Force Base (Scientific and Technical Information Office)
 Commander, Air Force Human Resources Laboratory, Williams Air Force Base (AFHRL/OT)
 Commandant Coast Guard Headquarters
 Commanding Officer, U.S. Coast Guard Research and Development Center, Avery Point
 President, National Defense University (3)
 Defense Technical Information Center (DDA) (12)